FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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AFMA REGISTRATION SETS ALL-TIME RECORD

CHICAGO—A new all-time registration record was established at the American Feed Manufacturers Assn.'s 51st Annual Convention and 6th National Feed Show in the Conrad Hilton Hotel May 11-13. A total of 2,904 delegates were recorded at the main registration desks. Additional hundreds of wives and others not registered meant a total of nearly 4,000 persons were in Chicago for the big national meeting.

This announcement was made by W. E. Glennon, AFMA president, at the close of the meeting. The previous record was established at the 49th annual AFMA meeting and 5th National Feed Show, when 2,832 delegates registered.

Convention news was reported by 222 editors, reporters and radio and television farm directors. Fifty three editors obtained 470 prints of the 35 different convention pictures. Twelve live broadcasts and 32 tape recorded interviews were conducted at the convention featuring persons taking part in the program.

Plans are now under way for the 52nd annual AFMA convention to be held at the Conrad Hilton Hotel, Chicago, May 9-11, 1960.

Cuts Reported in Broiler Settings, Chick Placements

SALISBURY, MD.—There appears to be a general slowing-down period in the nation's broiler industry.

Hatcherymen in the 22 major broiler states last week set 46,736,000 eggs. This was 1% less than the previous week and 7% less than the corresponding week a year ago. Decreases in the number of eggs set from the previous week were reported in 12 of the 22 states. Sharpest decreases from the previous week occurred in North Carolina, Pennsylvania, and Mississippi.

The number of chicks placed last week slowed down, too. A total of 34,148,000 was started in the 22 states. This was 4% less than the previous week and 2% below the corresponding week a year ago. Decreases were reported in 15 states—increases in seven, compared to the previous week. The largest decreases from the previous week occurred in Texas, Alabama, Mississippi, and Georgia.

The slowdown has not been due to any sudden decline in the market. Last week, the average price paid on the farm was 17.19¢ in Delmarva. The week before it was 17.78¢ and six months ago, it was 17.11¢.

From the looks of things, the market has settled around the 17¢ mark, and the broiler industry is cutting back to upset this price.

Delmarva producers sent 3,677,000 broilers to market during the week ending May 9. This was 3% less than the previous week but the same as the corresponding week of 1958.

AFMA Program Challenges Industry To Move Ahead with Sound Principles

By GEORGE L. GATES
Editor of Feedstuffs

CHICAGO — The feed industry must develop a better sense of direction and plan in depth to match its growth with that of animal agriculture and food processing and distribution industries.

This challenge to pursue progress on a path of sound business principles dominated the sessions of the 51st American Feed Manufacturers Assn. convention devoted to specific industry problems.

Registration at the convention held in conjunction with the National Feed Show at the Conrad Hilton Hotel May 10-13, reached 2,904. This was a new record, topping the previous high of 2,832 recorded two years ago when the convention also was combined with the show.

Interest of the industry in seeking new tools with which to fulfill its larger food production role was much in evidence at the show. Traffic through the exhibit area held to a steady surge throughout most of the convention period.

"Facing the Issues" was the theme of an address by I. S. Riggs, chairman of the AFMA board and vice president of the Quaker Oats Co. A similar theme threaded through the "Agriculture in Transition" closed circuit television presentation which climaxed the convention sessions.

"Feed manufacturers' pressures for volume must be expressed in sound, business-like methods for long-term animal agriculture gains," Mr. Riggs said. "What we do must be good for the producer and for the consumer. If we keep this in mind, the feed business will be good for all of us."

At another point Mr. Riggs declared: "We are not in business to put ourselves out of business. We are in competition for customers. Let's sell ideas, quality, services and financial responsibility. As in any economic endeavor, control in the feed industry is important. Proper timing of control measures is vital."

(Turn to AFMA, page 91)

Other reports from the AFMA convention appear on pages 4, 6, 7 and 8.

AFMA OFFICERS—Officers elected by the American Feed Manufacturers Assn. at the AFMA board's annual meeting during the convention in Chicago are (left to right): W. E. Glennon, Chicago, president; W. T. Diamond, Chicago, secretary-treasurer; C. B. Fretwell, Spartan Grain & Mill Co., Spartanburg, S.C., vice chairman of the board, and I. S. Riggs, the Quaker Oats Co., Chicago, chairman of the board. Mr. Glennon, Mr. Diamond and Mr. Riggs were reelected to their respective positions.

I. S. Riggs Reelected AFMA Chairman

CHICAGO—I. S. Riggs, vice president of the Quaker Oats Co., Chicago, was reelected chairman of the board of directors of the American Feed Manufacturers Assn. at the 51st annual AFMA convention in Chicago.

C. B. Fretwell, president of the Spartan Grain & Mill Co., Spartanburg, S.C., was elected vice chairman and member of the executive committee, succeeding R. D. Jackson, Jackson Grain Co., Tampa, Fla., whose term as a director expired this year.

W. E. Glennon was reelected executive president of the association, and W. T. Diamond was reelected secretary-treasurer.

Other members of the executive committee elected during the board of directors' meeting include: Ellis English, Archer-Daniels-Midland Co., Minneapolis; J. L. Krider, McMillen

(Turn to OFFICERS, page 8)

Renewed Efforts On Cwt. Grain Trading Planned

— AFMA Report —

CHICAGO—Renewed efforts will be made to change grain trading from a bushel to a weight basis. Acting as a "catalyst" in the proposed shift from bushel to hundredweight trading will be the National Association of State Departments of Agriculture.

Plans for further discussion and action on the proposed change were outlined this week at the annual meeting of purchasing agents of the American Feed Manufacturers Assn. The AFMA buyers' group long has spearheaded a campaign to effect the change.

Speaking at a meeting of the purchasing agents, Donald N. McDowell, chairman of the executive committee of the National Association of State Departments of Agriculture, recommended buying and selling of grain by weight. Mr. McDowell is director of the Wisconsin State Department of Agriculture.

National Committee

He announced that his association is appointing a national committee

(Turn to TRADING BY WEIGHT, page 87)

FEEDSTUFFS *Features This Week*

INTEGRATION: Integration in beef cattle and lamb production is discussed starting on **page 30** in the second of a series of two articles.

NUTRITION: Linseed oil meal feeding practices and research—past, present and future—are discussed in an article on **page 40.**

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FEEDSTUFFS

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Facing the Issues

SOLID OBSERVATIONS AND SOUND advice characterized the talk given by the American Feed Manufacturers Assn.'s chairman, I. S. Riggs, at the convention this week. In urging the industry to "face the issues" Mr. Riggs commented on the economic opportunities for healthy growth available to the feed industry and also on several of the symptoms of economic illness that cause the industry to break out in more frequent fevers.

This seemingly contradictory situation in which the industry finds itself perhaps is typical of an industry enmeshed in such widespread changes as are occurring in animal agriculture and food production and distribution.

The industry finds itself contemplating a most tremendous bulge in future food demand which it will be called upon to help supply. At the same time it is taking some serious bumps in helping to push some products faster than current consumer demand can absorb at prices profitable to the industry. Some of the steam for driving the broiler and egg machinery comes from other directions, too, but the feed industry must shoulder a good share of responsibility in this.

MODERATION, SOUND PLANNING and a better understanding of the changes and of how the industry can best contribute to its longer range interests all are factors in meeting these problems of growth. These comments by Mr. Riggs reflect the sort of approach that can be helpful in "facing the issues":

"Improved knowledge of production processes which make it possible to concentrate large numbers of birds is leading to big changes in egg production and marketing. Our competitors are not the cause of the change. What they are doing is a result, not the cause, of the market change. It is easy to lay the blame for marketing changes at the feet of competitors. We think that because Company XYZ is doing something differently, there is reason for the entire industry to change. This isn't necessarily so. Unless Company XYZ has found a lower cost or a better way, we do not have to change. But if there is a better way, we must change to meet the results of technical advances. . . .

"Dangers lurk in expansion! Greater business risks must be taken. These risks must be insulated by good business practices throughout the industry. And the risks must be taken on a profitable basis. If business risks are increased, if the services required by animal agriculture are broadened, we must be compensated by returns commensurate with services performed and risks involved.

"I am not worried about the capital required to finance the pullet crop, if that is necessary. For these funds can be supplied if they will earn a profitable return. But I am concerned about how the industry may use these funds. To extend credit to an already over-extended egg producer—whose present operation will tax all his art in producing eggs—is foolish and wasteful. . . .

"We are not in business to put ourselves out of business. We are in competition for customers. Let's sell ideas, quality, services—and financial responsibility.

"As in any economic endeavor, control in the feed industry is important. Proper timing of control measures is vital. . . .

"All phases of our business must be timed properly. Decisions made now will affect next year's livestock markets. We are now, in effect, forming next year's livestock supply, and should be planning on expectations of next year's markets, not this year's markets. . . .

"The distressed broiler, egg and chick prices of recent months are the result of the planning decisions made last year. The decisions now being made by breeders affect next year's market supplies. The time to have controlled losses for this year was some months ago. Had more attention been given to the forward looks published by the AFMA poultry survey committee in the past months, overproduction in some poultry operations would have been eliminated—or most certainly reduced."

FAILURE OF MANY IN THE INDUSTRY to take advantage of the great amount of statistical data on production is a shortcoming that should be corrected. Feed men, by understanding basic production information, such as placement of poultry breeder stock should be able to relate cause with effect and recognize where end product price troubles start. Better performance in the study of economics would present many opportunities to avert over-production problems.

The industry, of course, cannot as one man move to correct all of its troubles by studying the charts and graphs, but more attention to this type of planning could help level out some of the bumps.

Its chief resource is the ability of its men. We concur in the observation made by Mr. Riggs: "Surely this industry, made up of the finest and most capable people I have ever known, can understand the causes of the changing patterns in animal agriculture and adjust itself to new patterns in a businesslike way."

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

A little more optimism prevailed in the feed industry this week. In addition to a better tone in broiler prices, there were scattered reports of improved feed business generally. Hog feeds continue to be the bright spot in the industry, and turkey feeds are moving into better volume. Some areas, however, still report spotty demand, and the lack of a good, strong chick starter business is also being felt. One area report indicates that feed men there have now abandoned hope for a seasonal upsurge and look for business to continue at the rather colorless pace of the past few weeks. Feeders continue to be rather cautious in their buying. The wholesale feedstuffs price index for the week was down slightly to 83.7, a drop of 1.4 points from the previous week and also down slightly from a year ago. The feed grain index was 70.4, compared to 70.2 a week earlier and 69.9 a year earlier. (Ingredient prices in detail on pages 88-90.)

Northwest

Demand showed a slight, but general, improvement this week. Feed mill representatives said continuing demand for hog growing rations was backed by improving volume of turkey feed, surprisingly good sales of dairy feeds and fairly good chick feed sales.

Field work is many parts of the area is caught up for the moment, prices for feed are lower and more attractive to the feeder and "there seems to be that spring optimism that farmers have," as one representative put it.

Demand has not shown a strong upward surge from a week ago, but it is generally better, and it is better for all types of feeds. Chick starter sales are down for some firms and about even with last year for others. Egg feeds are still getting fairly good demand, despite lower prices for eggs.

Turkey feed volume is also down somewhat for some mills. Turkey financing appears to be less active in the area than it was a year ago.

Feed prices are unchanged to down slightly on price lists for next week as a result of lower prices for alfalfa meal, animal by-products and millfeeds.

Southwest

Formula feed business in the Southwest is spotty. Sales will be brisk for a few days and then fall off to practically nothing for a few days. Averaging these ups and downs out makes about a five-day week for most mills. But production is a "bare" five days with very little backlog for the majority.

Swine feed is moving best of any. Pig starter volume is dwindling slightly, but the slack is being taken up by concentrates and grower feeds as as bumper pig crop grows.

Chick starter is still disappointing. The small flocks have not been started in this area this spring, and the low egg prices are not encouraging any late starters. As a result, some mills estimate that over-all chick starter sales are 10% under a year ago. Growing feeds are starting to pick up for those chicks that were put down. Turkey feeds are coming along seasonally, although there do not seem to be as many turkeys in the area as last year. Broiler rations make up a steady share of the volume, even though the end-product prices are considered depressing.

Cattle feed demand is slow, but dairy rations are moving fairly well for mills that specialize in that type of trade.

Field work and price trends are given as reasons for the spotty nature of business. When the weather is nice, farmers spend all their time in the fields. When it rains, they all rush to town to buy feed and the dealers go to the mill for feed. Many dealers and farmers consider the prices to be high so they follow a hand-to-mouth buying policy.

Price lists for some mills next week are expected to be from $1 down to $1 up. Other mills will hold the line.

Northeast

Sales of formula feed held up surprisingly well despite continued weakness of end products.

Eggs maintained their relentless decline, with farm-level prices reported down to 20½ to 24½¢ doz.

Broilers edged 1¢ lower in some areas to levels which in most instances are unprofitable to growers. Prices in the East ranged from a low of 14¢ lb. to a high of 17¢ and an average return of 15@15½¢.

Egg mashes, however, continued to be the backbone of the market. Turkey feeds are moving in greater volume and chick starter and growing feeds are improving. Broiler feeds continued to be ordinary.

The first shipment of Caribbean molasses via the new St. Lawrence Seaway was expected to arrive in Buffalo May 14. The cargo, aboard the Athelduke of London, was assigned to the Pacific Molasses Co. and the Cooperative GLF Mills, Inc.

Dairy items continued to give ground in the ingredient market.

Corn was practically unchanged. Oats were up 1¢ and barley and feed wheat held steady.

Soybean oil meal held up very well

(Turn to MARKETS, page 92)

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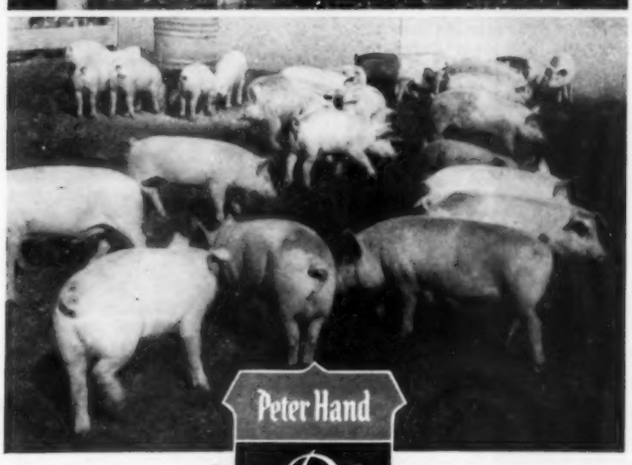

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Molasses Definitions, Other Problems Discussed at Feed Control Meeting

— AFMA Report —

By ROGER BERGLUND
Feedstuffs Managing Editor

CHICAGO — Possible revisions in the definitions of molasses were the subject of an extensive discussion at an open meeting on feed control problems jointly sponsored by the Association of American Feed Control Officials and the American Feed Manufacturers Assn.

The meeting, which took place May 13 in connection with the AFMA convention, was held by the AAFCO industrial relations committee and the AFMA feed control relations committee. Presiding were A. J. Smith of McMillen Feed Mills, Ft. Wayne, Ind., and W. B. Griem, control official from Wisconsin.

In addition to the molasses discussion, the meeting dealt with such things as bulk feed delivery identification, use of "feed" or "feed grade" as part of ingredient definitions, use of code numbers as a means of identifying medicated additives in feeds, vitamin content guarantees, listing of antibiotics on labels, feeds used for experimental purposes and the new food additive amendment (which includes feed) to the U.S. food and drug law.

Certain problems in connection with the Delaney amendment to the food additive amendment apparently were one of the factors in drawing a large attendance at the open meeting, but the discussions did not get into this particular subject to any great extent.

Molasses Discussion

At the outset of the molasses discussion, Mr. Smith said the feed industry group felt that the problem deserves further study and that before it could make definite recommendations in regard to definitions, there should be suggestions from the AFMA purchasing agents and Nutrition Council.

(Also see story on the purchasing agents meeting on page 6.)

At the conclusion of the discussion, W. E. Glennon, AFMA president, said it was apparent that there was some disagreement on the question within the feed industry, that there was disagreement among segments of the molasses industry and that the problem would require further committee work.

A closed committee session following the open meeting developed the recommendation that the feed industry give its recommendations to the AAFCO molasses investigator on possible revisions in the definitions.

At present a tentative AAFCO definition states that "feeding cane molasses is a product prepared from the juice of sugar cane. It may consist of various types of cane molasses or blends thereof with or without addition of other constituents which are normally present in and derived from cane molasses, provided the total sugar content expressed as invert sugar is not less than 48% and the Brix by double dilution is not less than 79.5°."

Recently, there has been a USDA report on Texas A&M College research in which it was recommended that sugar content and moisture be used as the bases for grades or standards for blackstrap molasses.

Analysis Problem

Albert Teeter of the Industrial Molasses Corp., Minneapolis, said that use of the system proposed in the USDA report would require expensive analytical procedures which could add $3 per ton to the cost of molasses in truck lots. He also questioned whether analytical laboratories could come up with satisfactory moisture figures. Other molasses industry spokesmen also questioned the suggestions on moisture and sugar in definitions or standards. A. G. Heideman of Cargill, Inc., said that if molasses is bought from a reliable supplier, Brix can be a good indication of sugar content.

E. A. Epps of Louisiana, molasses investigator for the AAFCO, said that moisture and sugar vary by area with different molasses sources and that Brix "may not mean a thing." He also said he felt the cost question in connection with analysis work was being over-emphasized.

However, some of the molasses industry people called Brix a "practical compromise."

Feed industry representatives who commented varied in their views. One said the molasses industry apparently did not want to throw over use of Brix while feed people would like to. Another feed man said Brix was the best and quickest method of analysis. Mr. Epps said elimination of Brix from definitions or standards would not keep people from using it in trading molasses, but he said he felt official standards should be more definite.

Also brought out in the discussion were certain problems in the current definition for firms which make dehydrated molasses products.

At the conclusion of the discussion, Mr. Smith said the feed industry has an obligation to come up with some recommendations, and he said it was

(Turn to CONTROL MEETING, page 87)

FEED SHOW—Visitors to the 6th National Feed Show look over exhibits in Chicago's Conrad Hilton Hotel during the 51st convention of the American Feed Manufacturers Assn. More than 100 machinery, ingredient and other firms had displays which filled large halls of the big Hilton hotel. The show attracted a constant stream of visitors over a four-day period, May 10-13, and firms with exhibits reported extensive interest in the various products, supplies and services.

Minnesota Egg Group Proposed

MINNEAPOLIS — The Minnesota Egg Producers Assn. has called upon feed manufacturers, hatcherymen, egg dealers and handlers and representatives of allied industries to help organize a proposed Minnesota Egg Council which would promote the state's $100 million egg industry.

L. L. Baumgartner, Litchfield, Minn., executive secretary, Minnesota Egg Producers Assn., has scheduled a meeting of representatives from various segments serving the Minnesota poultry and egg industry for May 22 at Hotel Radisson, Minneapolis, starting at 10 a.m.

He said officers and directors of the Minnesota Egg Producers Assn. "take the position that the time has come when Minnesota's egg industry will have to work together, particularly now, when so much adjustment is under way."

According to the proposed Minnesota Egg Council plan, regular membership would be extended to: Egg producers, egg handlers, hatcherymen, feed manufacturers and manufacturers and distributors of poultry supplies.

Mr. Baumgartner said associate membership would consist of heads of education and regulatory agencies to serve in an advisory capacity.

Mr. Baumgartner said the following sources had been suggested for raising the money necessary for operation of the council: Members, egg producers (check-off on cases of eggs sold), egg handlers (check-off on cases of eggs handled), feed manufacturers (check-off on tons of feed sold) and hatcheries (check-off on chicks sold).

Deadline for Wheat Acreage Setting Delayed to June 1

WASHINGTON—Beating the May 15 deadline for final announcement of wheat acreage allotments and levels of price supports for complying farmers, the White House has signed into law a measure which moved the deadline for the U.S. Department of Agriculture announcement forward to June 1 to give Congress time to act on pending new wheat legislation.

However, this legislation, now taking shape in the House Agriculture Committee in Document H.R. 7118, has been dubbed as unacceptable to the administration since it would fix a level of support for wheat from the next crop at 90% of parity for producers who, for the years 1960-61, would agree to reduce their proportionate share of the national acreage allotment base of 55 million.

The new bill, in addition to the 90% of parity support for compliers with the proposed acreage allotment reduction: (1) Cuts back the minimum 15-acre exemption to 12; (2) permits unlimited production of wheat on any farm when such production is used on that farm; (3) retains the minimum national acreage allotment of wheat at 55 million, and (4) boosts the existing penalty for overplanting, and stipulates that non-cooperators will be ineligible for price support.

Administration sources in Congress say this measure is generally unacceptable, and in its present form is certain to be vetoed if passed. This opinion is based on the fact that this new measure violates the basic concept of wheat price support set forth in the Presidential farm message to the 86th Congress, which recommended a lower level of price support based on nearby prevailing market prices for wheat, and the elimination of the frozen minimum level of national wheat acreage allotments.

FDA Statement On Status of Drugs Awaited

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The feed industry this week was awaiting issuance of a statement from the Food & Drug Administration which would clarify the legal situation in regard to certain drug additives which are being or may be used in feeds.

As of May 15, no statement had been issued, but a statement was expected next week.

The problem is involved in the Delaney amendment to the new food additive law. This clause says, in part: ". . . No additive shall be deemed to be safe if it is found to induce cancer when ingested by man or animal, or if it is found, after tests which are appropriate for the evaluation of the safety of food additives, to induce cancer in man or animal."

It was reported that because of certain laboratory animal and other data, arsenicals and estrogens were involved in current questions regarding the status of possible new products or certain medicated feeds.

As a result of application of the Delaney clause,, FDA was reviewing its position regarding feed industry use of estrogens and arsenicals.

At this time it is expected that FDA will continue previous clearances of use of these substances in feeds, but there was some doubt as to whether it could find legal authority to clear pending applications for similar uses.

In view of some broad uncertainties as to legal problems involved, it was impossible this week to chart accurately the pending FDA action, but advance information indicated that earlier clearance of estrogenic substances in cattle feeding, as one example, would not likely be upset, at least at this time. It is implied that previous clearances may later come under a re-study.

In addition to certain drug products themselves, the situation affects many feed formulas where medicaments are used. It was indicated that, because of FDA requirements on feed manufacturers, feed formulas under certain circumstances were "frozen."

Since the new food additive amendment regulations became effective, any clearances of additives under certain circumstances have been held up, and feed manufacturers submitting supplementary applications reportedly have had their applications held up.

It is understood that FDA has been studying the problems involved with both estrogens and arsenicals in connection with the Delaney amendment, which would totally ban use of any material or product which cannot be demonstrated to be totally free of carcinogenic effects. It is believed that the Delaney amendment does not permit any residual tolerance in end products as otherwise provided in certain cases.

A. H. Anders Named to New Central Soya Post

FORT WAYNE, IND.—The promotion of A. H. Anders to the newly created position of manager, Chicago grain division office, effective July 1, has been announced by Central Soya Co., Inc., Fort Wayne.

Mr. Anders, now manager of the company's Minneapolis office, will be succeeded in that post by Richard Burket, assistant manager.

Central Soya officials announced that the grain operation formerly carried on by the company's chemurgy division at the Laramie Ave. plant will be consolidated with the new grain division office.

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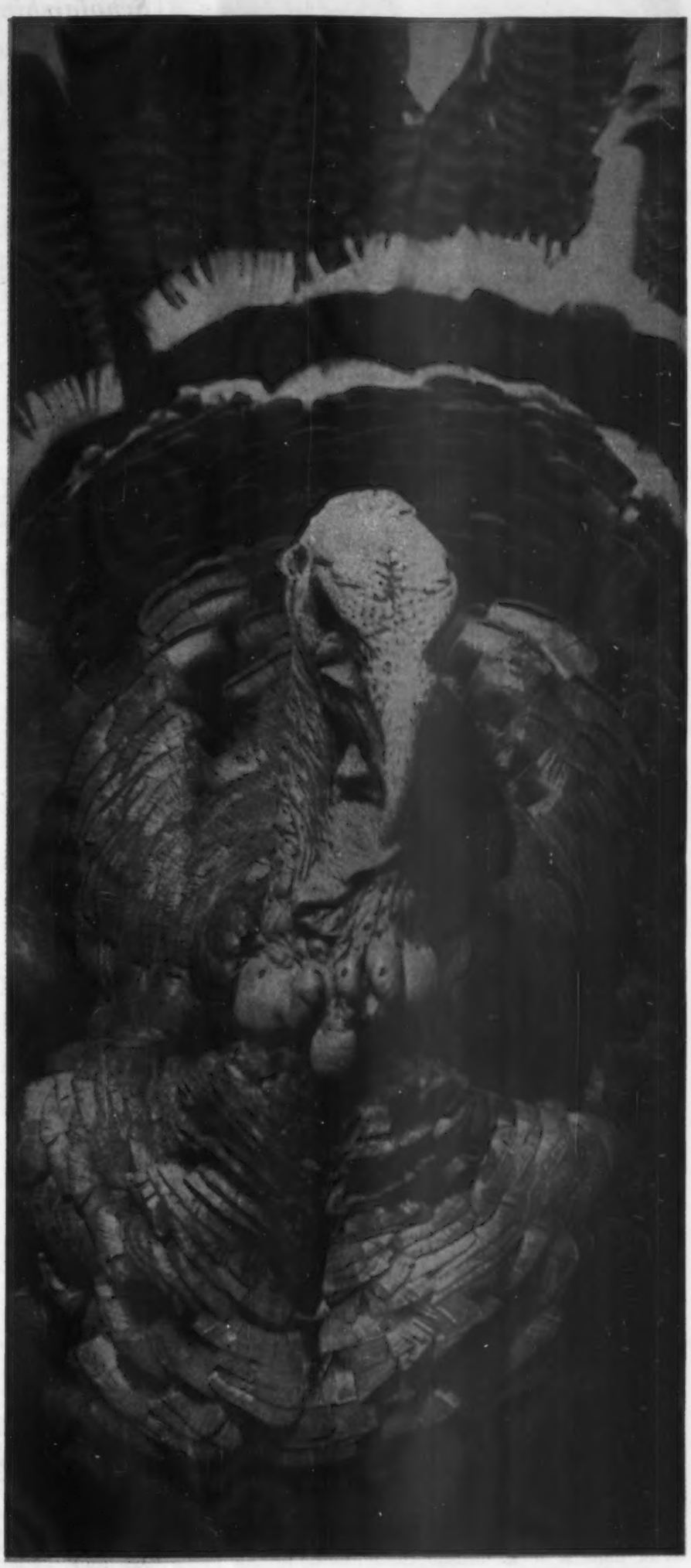

AFMA NUTRITION AWARD WINNERS—Recipients of the annual AFMA nutrition research awards were presented plaques at the association's annual convention in Chicago this week to go along with $1,000 checks which had been presented earlier. The plaques were presented by Dr. I. E. Robertson (left), chairman of the AFMA Nutrition Council. Recipients (left to right) are Dr. Charles A. Lassiter, Michigan State University; Dr. Frederick W. Hill, Cornell University, and Dr. Orville G. Bentley, South Dakota State College.

Winners of Annual AFMA Awards Announced; Leslie E. Bopst Honored

— AFMA Report —

CHICAGO—A feed control official, a farm magazine, a radio-television farm director and three scientists were honored by the American Feed Manufacturers Assn. as part of its annual convention this week.

Honored were the following:

● Leslie E. Bopst, secretary of the Association of American Feed Control Officials for 31 years.

● The Southern Planter Magazine, Richmond, Va., national winner of the AFMA Animal Agriculture Award for Editors.

● Harold J. Schmitz, farm director, Station KFEQ-Radio and Television, St. Joseph, Mo., winner of the AFMA Animal Agriculture Award for Farm Directors.

● Dr. Charles A. Lassiter, associate professor of dairy science, Michigan State University, East Lansing, winner of the AFMA dairy science award.

● Dr. Frederick W. Hill, professor of animal nutrition and poultry industry, Cornell University, Ithaca, N.Y., winner of the AFMA poultry science award.

HONORED—L. E. Bopst (right), state chemist of Maryland, was cited at the annual convention of the American Feed Manufacturers Assn. in Chicago for "more than 30 years of outstanding service as secretary of the Association of American Feed Control Officials and a lifetime of promoting cooperation and better understanding between officials and the feed industry." Shown presenting the AFMA plaque is W. E. Glennon, president of the AFMA.

● Dr. Orville G. Bentley, dean, College of Agriculture, and director, Agricultural Experiment Station, South Dakota State College, Brookings, winner of the AFMA Society of Animal Production award.

Mr. Bopst was presented a specially-inscribed plaque by W. E. Glennon, executive president, AFMA, for "his faithful and devoted service during 31 years as secretary of the Association of American Feed Control Officials, and for a lifetime of zealous effort inspiring greater understanding of industry problems and the need for cooperative endeavor, and for his forthright and realistic advocacy of public welfare."

Mr. Bopst, who is Maryland state chemist, first became secretary of the AAFCO in 1927, serving until 1958.

The AFMA awards for agricultural editors and farm directors were inaugurated in 1958. This year's editors' award went to the Southern Planter, America's oldest farm paper with distribution of over 400,000 in the Southeast, for "contributing to the opening of a new era of agricultural opportunity and prosperity in the area" through its editorial emphasis on meat, milk and egg production. Dr. Paul D. Sanders, editor, accepted the award for his publication.

Mr. Schmitz won the farm directors' award for "his timely and interpretive information, performing a most valuable service to the livestock and poultry producers in Missouri and surrounding states . . . for fostering professional improvement in the farm radio industry . . . and for his role of leadership in agricultural and civic organizations whose activities benefit animal agriculture."

The three scientists had been named winners of their awards earlier. They were presented $1,000 checks at the annual meetings of their scientific associations — the American Dairy Science Assn., the Poultry Science Assn. and the Society of Animal Production.

They were introduced at the AFMA convention, however, to receive recognition from the industry and to be presented with engraved plaques. Recognition of the award winners this year brings to 34 the number of awards provided by AFMA.

Golf Outing June 23

LOUISVILLE, KY. — The annual golf outing of the Louisville Feed Club is scheduled for June 23 at the River Road Country Club, Louisville.

Scholarship Plan Described to AFMA Board

— AFMA Report —

CHICAGO—A scholarship program "of high value to the students and low cost to the donors" was presented to the board of directors of the American Feed Manufacturers Assn. by James C. North, president of Nutrena Mills, Inc., Minneapolis, at the AFMA convention.

(Another story on the scholarship plan appeared in Feedstuffs, May 9, page 1.)

This is the Kansas State University Scholarship House program which began last fall, and expands next September with the opening of the Straube Memorial Scholarship House.

Purchase of this house by Kansas State University was made possible by a gift from the family of the late Oscar Straube, former president of Pay Way Feed Mills and prominent citizen of Kansas City. Mr. Straube had been active in AFMA affairs for many years, and completed a two-year term as chairman of the association's board of directors only six months before his death last November.

Mr. North told the AFMA board that $500 is enough to provide a permanent annual scholarship of significant value through this program, as several contributors can share the cost of various rooms. It is estimated that a total of $60,000 will be needed to launch the Straube Memorial Scholarship House successfully.

The house is to be a scholarship facility for especially able and deserving students in feed technology and related animal sciences. Residents do all the cooking, cleaning and minor maintenance, paying only their share of the actual operating and food costs, which run little more than half the current costs in university-operated dormitories. Financial arrangements are handled through the Kansas State University Endowment Assn.

Additional details on the program can be obtained from Mr. North or Dean McNeal, the Pillsbury Co., Minneapolis.

Machinery Group Elects C. N. Hultberg As President

CHICAGO — The Grain Processing Machinery Manufacturers Assn., meeting here May 9, elected officers for the coming year and took stock of its status and its various projects, including efforts to have one national machinery show which eventually would cover all phases of the industry.

C. N. Hultberg, California Pellet Mill Co., Crawfordsville, Ind., was elected president of the group, succeeding Harold Alsted, Sprout, Waldron & Co., Inc., Muncy, Pa. A. C. Barbeau, Jr., S. Howes Co., Inc., Silver Creek, N.Y., will serve as vice president, and Raymond Walter, New York, was renamed executive secretary.

Elected or reelected as board members were Mr. Alsted; Mr. Hultberg; R. F. Merwin, Eriez Manufacturing Co., Erie, Pa.; Irl Daffin, Daffin Manufacturing Co., Lancaster, Pa., and Ralph Williams, B. F. Gump Co., Chicago. Walter C. Ronk, Barnard & Leas Manufacturing Co., Cedar Rapids, Iowa, was chairman of the nominating committee.

One of the principal subjects under discussion was the National Feed Show, held in conjunction with the American Feed Manufacturers Assn.

(Turn to MACHINERY, page 91)

Molasses Talks Highlight Buyer Group's Meeting

— AFMA Report —

By ROGER BERGLUND
Feedstuffs Managing Editor

CHICAGO—Discussion of proposed new grades and standards for blackstrap molasses for feed received a good deal of attention at the open meeting of purchasing agents at the American Feed Manufacturers Assn. convention.

Dr. L. R. Richardson, Texas A&M College researcher, told of his study on developing grades and standards for molasses, and then molasses and feed industry representatives commented on various aspects of the problem.

Dr. Richardson told of his previously reported work in which he recommended that moisture and carbohydrate be used as standards in setting grades or standards. He said that Brix, a measure of specific gravity, does not consistently measure total sugars and does not provide a consistent relationship with moisture. He recommended that molasses as low in moisture as possible be used to help avoid feed spoilage. Regarding standards based on carbohydrate and moisture, he said he felt that the per sample cost of analysis for cars of molasses would not add appreciably to the cost of molasses per ton.

Albert A. Teeter, Jr., Industrial Molasses Corp., Minneapolis, said he felt use of a sugar and moisture basis of grading would not be practical. He said the cost of adequate analysis since most molasses is sold in truckloads could amount to $3 per ton, and he mentioned difficulties in moisture and sugar determinations. (More details on Mr. Teeter's feelings on this subject, as well as on Dr. Richardson's report, appeared in the April 4 issue of Feedstuffs.)

A. G. Heideman, Cargill, Inc., noted that many of Dr. Richardson's samples did not meet specifications.

(Turn to BUYER GROUP, page 87)

Davenport Elevator Co. Plans Open House

DES MOINES, IOWA—The Davenport Elevator Co., Des Moines, is planning an open house May 18 for feed dealers, suppliers and friends of the company. The firm recently built new offices and a warehouse in Des Moines.

The company distributes ingredients, antibiotics, vitamins and poultry, hog and turkey equipment, along with other items associated with the feed trade, throughout most of Iowa. Distribution points are at Des Moines, West Bend, Fort Dodge, Davenport and Casey, Iowa.

J. A. Olson, West Bend, is president of the firm; Merrill C. Schlief is vice president and general manager of the Des Moines branch, and C. V. Johnston is sales manager.

Raymond L. Haynie, 40, Dies of Heart Attack

WILDWOOD, N.J.—Raymond Lee Haynie, Jr., 40, president of the Reedville (Va.) Oil & Guano Co., died recently of a heart attack.

Mr. Haynie, who had homes in Wildwood and Reedville, had headed the Reedville Oil firm since 1950. He formerly had served as vice president and chairman of the industrial products division of the National Fisheries Institute in Washington, and at the time of his death was a member of the fisheries advisory committee of the Bureau of Commercial Fisheries.

Surviving him are his wife and two children, mother and a brother. Funeral services were held at the Haynie residence in Reedville, with burial in Roseland Cemetery.

EXECUTIVE COMMITTEE—Members of the new executive committee of the American Feed Manufacturers Assn. Nutrition Council are (left to right, seated): Dr. W. R. Graham, Jr., the Quaker Oats Co., Chicago; W. T. Diamond, Chicago; Dr. Ruel E. Ward, Eastern States Farmers Exchange, West Springfield, Mass.; Dr. J. W. Hayward, Archer-Daniels-Midland Co., Minneapolis, and Dr. E. I. Robertson, John W. Eshelman & Sons, Lancaster, Pa. Those standing are (left to right): Dr. J. Wesley Nelson, Nutrena Mills, Inc., Minneapolis; Dr. W. W. Cravens, McMillen Feed Mills, Ft. Wayne, Ind.; Dr. Logan T. Wilson, Honeggers' & Co., Fairbury, Ill.; K. M. Nold, Osborne McMillan Elevator Co., Minneapolis; Dr. Frank M. Crane, Land O'Lakes Creameries, Inc., Minneapolis, and Frank L. Coune, Jackson Grain Co., Tampa, Fla. Three of these men are new members: Dr. W. R. Graham, Jr., Dr. J. Wesley Nelson, and K. M. Nold.

Dr. Ruel E. Ward Elected to Head Nutrition Council

— AFMA Report —

CHICAGO—Dr. Ruel E. Ward, director of feed research for Eastern States Farmers Exchange, West Springfield, Mass., is the newly-elected head of the scientific and technical division of the American Feed Manufacturers Assn. He was elected by the AFMA Nutrition Council during the group's 19th annual meeting held in connection with the AFMA convention in Chicago.

Dr. J. W. Hayward, director of nutrition for Archer-Daniels-Midland Co., Minneapolis, was elected vice chairman.

Three new members were elected to the executive committee of the Nutrition Council. They are: Dr. J. Wesley Nelson, Nutrena Mills, Inc., Minneapolis; Kenneth M. Nold, Osborne McMillan Elevator Co., Minneapolis, and Dr. William R. Graham, Jr., the Quaker Oats Co. research laboratories, Barrington, Ill.

Dr. Ward has served as chairman of the Nutrition Council research and program committees, has been a member of the executive committee for two years, and is immediate past vice chairman of the council. His vocational achievements include membership in five academic and scientific honor societies, 1958 chairmanship of the eastern division of the American Dairy Science Assn., and chairmanship of the awards committee of ADSA.

Dr. Hayward has been a member of the Nutrition Council since 1945. He has served on many committees, including the executive committee, and is a past chairman of the education committee.

The Nutrition Council is made up of scientists responsible for feed formulation, quality control and biological research for 72 feed manufacturers. In addition, scientific spokesmen for 12 allied industries serve as advisory members of the council.

Elected to full membership on the council was A. F. Kish, manager of feed research, Pennsylvania Farm Bureau Cooperative Assn., Harrisburg.

Elected to the allied industry association advisory committee were: Dr. L. S. Mix, National Flaxseed Processors Assn.; Dr. John T. Goodwin, Jr., Corn Industries Research Foundation; Dr. D. F. Green, Animal Health Institute; Dr. Gustav Bohstedt, Salt Producers Assn.; Richard A. Phelps, National Cottonseed Products Assn., and Robert J. Fleming, National Renderers Assn.

Ag Extension Program to Serve Feed Industry Planned; Pilot Project Set

— AFMA Report —

CHICAGO—A new departure in agricultural extension work—an extension service program to serve the feed industry—was revealed this week at the American Feed Manufacturers Assn. convention in Chicago.

The announcement was made at a special AFMA luncheon meeting by Dr. A. D. Weber, dean of the College of Agriculture at Kansas State University, Manhattan.

Dr. Weber explained that a pilot program for the feed industry will be launched soon at Kansas State. Eventually, it is hoped, extension service programs of a similar nature will be started throughout the U.S.

The K-State project is being financed under contractual agreement with the U.S. Department of Agriculture. It is the first nation-wide formal program launched by the Extension Service to assist an agricultural industry. Thus, the importance of the feed manufacturing industry in serving animal agriculture is receiving special attention.

As Dr. Weber noted, great changes are being made in agriculture, and adjustments must be made in programs like that of the Extension Service.

Three Phases

The project at K-State will have three phases: (1) Inventory of research on educational methods, materials and techniques now being used by the feed industry; (2) development of a pilot extension program to test new teaching methods and procedures; (3) conducting training programs and workshops to instruct extension personnel from other states

(Turn to EXTENSION, page 91)

Three Speakers 'Get Down to Business' With Comments and Ideas at Chicago

— AFMA Report —

CHICAGO—Three speakers literally "got down to business" in their talks on free enterprise, small business and management leadership at the American Feed Manufacturers Assn. convention in Chicago this week.

● The emerging belief that finding leaders of tomorrow is more fundamental than merely appointing a group of "crown princes" who may or may not have what it takes to be good managers was one of the major points developed by John M. Fox, president, Minute Maid Corp., New York, credited by many as being founder of the frozen concentrate industry.

● D. G. Williamson, president, Williamson Adhesives, Inc., Skokie, Ill., told convention delegates that change is a constant fact in American business, and change means opportunity for the small businessman.

● Dr. Nicholas Nyaradi, director, Institute of International Studies, Bradley University, and former minister of finance of Hungary, said American industry must do more in "selling" the free enterprise economic system to Americans and the rest of the world.

Other comments made by the three men in their convention talks follow:

WHAT IT TAKES TO BE A MANAGER—Mr. Fox listed six "fundamental qualities that must characterize men destined to command in business." These qualities, accompanied by remarks selected from his talk, include:

"1. Creative ability. Business is looking for men who can think . . . To be a good manager, a man must have the ability to think creatively, constructively and clearly . . . Remember, above all, that your superior expects you to bring him solutions, not problems.

"2. Judgment . . . Men who are destined for leadership must be men who can make sound and wise decisions.

"3. Administrative skill. The good executive must be able to foresee the needs of his operation—to forecast its requirements in manpower, materials, money and time . . . Modern business must have men who can plan.

"4. Positive attitude. A manager must be optimistic. He must radiate confidence and enthusiasm. The business world of today and tomorrow wants leaders who can inspire . . . The job of inspiring others also involves some important mechanical skills. You want men who can talk well, men who can write well, men who can be understood, men who can sell people on doing what they want them to do.

"5. Courage. Managers must be men who will gamble . . . Business is a matter of taking a risk and quite often the magnitude of the risk is a measure of the possible gain, or loss . . . Timing in business affairs is vital. So usually someone, a manager

(Turn to SPEAKERS, page 90)

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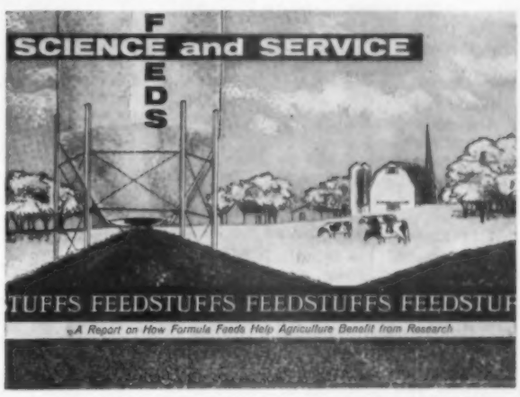
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Science and Service is a summary of special Golden Year articles in observance of American Feed Manufacturers Association 50th anniversary. Twelve outstanding feed authorities contributed to the reports which appeared in Feedstuffs during the past year and from which this booklet was compiled.

A limited number of reprints of Science and Service *are available now at a single copy price of 50¢. Larger numbers available at quantity prices, ranging downward from 35¢ each for 10 to 100, 25¢ each for 100, to 10¢ each for 1,000. Inquire about additional quantity discounts. Imprinting a three line company signature on the back page—$7 per hundred.*

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ELMER INTRODUCED—Elmer, the steer and the hole in his side for the study of nutritive values of various feeds, are shown by Dr. Herbert G. Luther (left), scientific director of animal health and nutrition, Chas. Pfizer & Co., Inc., to some participants in the seventh annual research conference at the Pfizer Agricultural Research Center, Terre Haute, Ind. The others are (left to right): J. Jerome Thompson, Pfizer vice president and general manager of its agricultural division; Dr. John I. Kross, Foreign Agricultural Service, U.S. Department of Agriculture, and Dr. Henri E. F. Simonnet, professor at the National School of Veterinary Medicine, Paris, France.

Pfizer Conference Stresses 'Food for Peace' Effort

TERRE HAUTE, IND.—A conference devoted primarily to reviews of new developments in livestock production and marketing concluded here with an appeal to recognize that bountiful food production in the U.S. can contribute to world peace.

"Let's not forget that the American farmer can become more important than the American diplomat," columnist Drew Pearson told an international gathering of more than 300 agricultural scientists, government farm leaders and feed industry executives.

Mr. Pearson spoke at the concluding banquet of the annual research conference at the Chas. Pfizer & Co. Agricultural Research Center May 8-9.

The conference was part of an International Animal Feed Symposium, a series of meetings and tours in Washington and the Midwest for 28 European farm specialists and their American counterparts. (Feedstuffs, May 9, page 8.)

"The peril of the world today is not the missile gap but the hunger gap," Mr. Pearson said. "We can make up for our lag in missiles by our surplus in food. The U.S. has the greatest farming know-how in the world."

Mr. Pearson was introduced by J. Jerome Thompson, vice president of Pfizer and general manager of its agricultural division.

The columnist said he saw the U.S. in a "paradoxical position, 'facing probably the gravest crisis in our peacetime history' yet, at the same time, neglecting its greatest weapons."

Two Weapons

He declared the U.S. can help combat the fundamental cause of war—the necessity for more room—by using two "very important, very potent, very real" secret weapons: First, the vast U.S. food supplies and the American farmers' great capacity to raise food and, second, the Russian people themselves. The columnist cited observations by Americans that the Russians do not want war, and he called for more exchange of all sorts of persons.

He said the problem is essentially that of distribution, so as not to dislocate the economies of other nations. Mr. Pearson said that instead of giving food away indefinitely, the U.S. could enter into long-term contracts with food-deficit countries for periods of years with a long-term loan that they could repay over 50 years. "We will have to plan ahead, use imagination, and put this Food for Peace Administration under the direction of broad-gauge, far-sighted executives," he said.

Urged to Work

J. Jerome Thompson, who introduced Mr. Pearson, urged farm and feed industry leaders to work for the success of "food for peace."

He suggested that his audience continue the person-to-person technique to overcome such obstacles as trade barriers, fear of economic dislocation and varying laws and regulations that deter inter-government food exchanges.

Mr. Thompson pointed out that food and food-production know-how represent one tremendous "bulge" that the economies of the U.S. and the free world have over Communist nations. We must bring these advantages into full play, he continued, "to win those people who waver on the brink of ideologies other than our free way of life."

Role of Marketing

In opening a marketing discussion panel by U.S. experts, Hugh O. Dermody, assistant general manager of Pfizer's agricultural division, declared that marketing and distribution of farm products are vital if food is to play its maximum role as a major instrument in strengthening the free world. He paid tribute to the feed industry for the essential part it plays in bringing the latest agricultural scientific research into practice. The panel was composed of eight of the nation's top authorities in banking, the feed industry and agricultural companies and associations.

The research sessions of the two-day conference were opened by Dr. Herbert G. Luther, Pfizer's scientific director of animal health and nutrition. Prominent authorities from five U.S. and Canadian universities and Pfizer research scientists reported the latest in health and nutrition of swine, ruminants and poultry. Their papers told of the newest results in tests on the use of tranquilizers, antibiotics, antibiotic potentiation and amino acids.

The conference also heard a panel of outstandng poultry pathologists from seven leading state universities. The 28 European guests participated actively in the program including as their contribution a panel discussion comparing the newest developments in Europe and the U.S. in subjects covered in the conference.

Traffic Committee Seeks Rail Rate Structure 'Responsive to the Times'

— AFMA Report —

CHICAGO—A new rail rate structure which will be "responsive to the needs of the dynamically-changing feed manufacturing and transportation industries" is being developed through efforts of the American Feed Manufacturers Assn. executive traffic committee.

In its meeting here during the annual convention of the AFMA, the committee aimed at establishing uniformity "out of a hodge-podge of rates." The feed industry has become centralized; areas have been reduced, and truck transportation is playing a larger role in the marketing pattern. Flour manufacturers, on the other hand, have remained centralized, Arthur E. Leitherer, Allied Mills, Inc., Chicago, told other committee members.

This unit of the AFMA is doing groundwork in an entirely new concept in rate-making for transportation of feedstuffs materials, A. M. (Al) Thomas, committee chairman, General Mills, Inc., said. Initial efforts have been proved in principle, and now the committee will be concerned primarily with working out details and will report back to the AFMA sometime in September, Mr. Thomas said.

Grain-Rate Structure

The basic need in a grain-rate structure, Mr. Leitherer said, is "(1) to meet competitive conditions whether they affect railroad transportation factors or industrial merchandising factors, and (2) to reflect a level that will move the traffic at its most economical basis, insuring relatively adequate earnings to the carriers and economic flexibility in merchandising and service needs of the shipping public." A suitable scale could be developed, he said, according to the basis prescribed in the 21-4800 adjustment, namely 9¢ for the first 40-mile block with half cent increments based on 10-mile blocks up to approximately 300 miles.

"The medium of distribution is fast changing," Mr. Leitherer continued, "resulting in a rapidly-diminishing need for rail service within a 50 to 75-mile radius of a plant. This also applies in the case of branch line service which no longer affords the flexibility and rapidity of service necessary to permit the consumer to effectively compete within his markets. This is one of the major factors causing the increase of private transportation within the feed industry," he added.

Railroads should gear their operations to the long-haul volume-type shipments, the Allied Mills representative said. An expansion of "piggyback" freight for feed ingredients and finished feeds is also in the offing. Meetings with carriers and other grain merchandising factors are under way and will continue to seek counsel, to arrive at a tentative scale of rates that would more nearly equalize inbound charges on raw materials, and outbound rates on finished feeds, it was reported.

J. R. Staley, the Quaker Oats Co., Chicago, reiterated the need for uniform transit rules, citing problems involved in working with 109 transit tariffs in southern states. He will head a special committee of four to work out a program that may be submitted to AFMA membership for comments.

Other items considered by the committee included the influence of the St. Lawrence Seaway on industry transportation, also grain, oil and meal rates in southern states. The committee will also seek to insist that rates be protected on coarse grain percentages contained in finished feeds.

"We have come farther without a boxcar shortage than ever," said T. K. Atchinson, Ralston Purina Co., St. Louis, due perhaps, he said, to better distribution by the Association of American Railroads. However, he warned, there is certainly no surplus of boxcars for grain. Quality of existing cars has not improved, and there is considerable difference of opinion on carriers providing feed manufacturers repair materials for boxcar cooperage.

Use of covered hopper cars for transportation of raw milling materials and for finished feeds was discussed by the committee as one present solution to meet the shortage of grain-tight boxcars.

New committee officers named were: E. D. Koon, Spartan Grain & Mill Co., Spartanburg, S. C., chairman; Leroy Hanson, Foxbilt Feeds, Des Moines, Iowa, vice chairman, and Mr. Leitherer, secretary.

Nebraska Firm Merges With Midwest Alfalfa

KANSAS CITY—Ray Bert, president, Midwest Alfalfa Blenders, Inc., and Martin Truitt, Progress Products, Inc., Overton, Neb., announced this week that the latter firm will become a part of Midwest Alfalfa Blenders.

Progress Products, Inc., operates two plants in the Overton area, which is in the Platte Valley of Nebraska. The firm also has 5,000 tons of gas storage capacity at Overton. All of the output of the Progress dehydrators will be blended and processed through the Midwest facilities at Topeka, Kansas, they said.

Sales offices of Midwest Alfalfa Blenders are located in Kansas City at the Ranchmart, 95th and Mission Road.

OFFICERS

(Continued from page 1)

Feed Mills, Inc., Ft. Wayne, Ind.; Robert F. McLeod, Wirthmore Feeds, Inc., Waltham, Mass.; E. D. Griffin, Allied Mills, Inc., Chicago; J. D. Sykes, Ralston Purina Co., St. Louis, Mo.; Steele Wright, Texas Farm Products Co., Nacogdoches, Texas, and Dean McNeal, the Pillsbury Co., Minneapolis.

Mr. Riggs joined Quaker Oats in 1923, following his graduation from Iowa State College. He became a vice president in 1953. Active in AFMA affairs for many years, and a past member of the board, Mr. Riggs also participates in work with the Illinois Chamber of Commerce, the Executive Club of Chicago, and other community affairs.

Mr. Fretwell has been president of the Spartan Grain & Mill Co. for 45 years. He is past president of the Southern Mixed Feed Manufacturers Assn., past member of the AFMA board, director of the Soft Wheat Millers Assn. and the Commercial National Bank, and a trustee of both Converse College and Spartanburg Junior College.

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Poultry Nutrition Experiments Reviewed at Research Meeting

By DR. P. E. WAIBEL
University of Minnesota

ATLANTIC CITY, N.J.—More than 10,000 scientists and other interested persons gathered at Atlantic City recently to attend the 1959 meeting of American Societies for Experimental Biology.

Constituent societies are the American Physiological Society, the American Society of Biological Chemists, the American Society for Experimental Pathology, the American Institute of Nutrition, and the American Association of Immunologists.

Over 2,300 scientific papers were presented during the five-day session.

It was encouraging to this reviewer to observe a greater number of nutrition papers presented which utilized the chicken as an experimental animal. Historically, the rat has served as the classic subject of fundamental nutrition research. Increased use of the chicken in such studies should be of mutual benefit to the poultry industry and nutrition science.

In view of the many simultaneous scientific sessions, it was not possible to cover all the papers, but a representative group of interest to the reviewer are considered. All papers are presented in summary form in the Federation Proceedings Abstract Book, March, 1959. The number in parentheses refers to the abstract number. Any comments in parentheses refer to the reviewer's opinions.

PROTEIN NUTRITION: Naber and Touchburn (2121) of Ohio State University reported studies on amino acid supplementation and processing of feather meal protein.

With a simplified corn-feather meal diet (20% protein), amino acid supplements effectively improved growth. In order of importance, the limiting amino acids were lysine, methionine, tryptophan, histidine and arginine.

When the diet was modified so that corn, feather meal, and soybean meal each contributed one third of the protein intake, approximately .25% DL-methionine and .55% L-lysine brought growth up to the controls fed a corn-soybean meal type diet.

In the work where one third of the protein came from feather meal, meals with pepsin digestibilities above 60% gave satisfactory growth. When two thirds of the protein was supplied by experimentally processed feather meals, it was possible to distinguish between meals of 60, 70, and 80% pepsin digestibility.

When feather meal containing diets were adequately supplemented with amino acids, nitrogen retention of chicks compared closely with that of chicks fed a control ration. (This is a further illustration of the value of amino acid supplementation. The usefulness of lysine is apparent, but hardly at $6 lb., when lysine costs about $1.25 lb. purchased as a 3% premix [soybean oil meal]).

Adkins, Bird, Harper, and Sunde (2029) of the University of Wisconsin reported a series of studies on increased requirement for phosphorus in free amino acid diets for chicks.

Considerable variation and generally poor growth rate was observed with various reported amino acid diet mixtures. However, additional sodium phosphate resulted in consistent growth responses. Growth rate was still inferior to that received with chicks fed a purified diet utilizing casein and gelatin as protein source.

In an attempt to refine the phosphorus requirement, the best level was .69% P for chicks fed the free amino acid diet and .47% P for chicks fed the diet containing protein. (This increased requirement for phosphorus parallels an increased energy need with free amino acid diets reported earlier by Rutgers and Illinois workers.)

Amino Acid Balance

Work at the University of Illinois by Klain, Scott, and Johnson (2094) using purified amino acid diets indicated that amino acid requirement values have real meaning only if the diet is adequate in all other amino acids, and only when amino acid balance is capable of promoting maximum gain and efficiency. This was illustrated by showing the inadequacy of normally optimum arginine and lysine levels (expressed as percentage of the diet) when the total dietary amino acid levels were increased approximately two-fold.

Another Illinois study by Kokatnur, Klain, Snetsinger, Kummerow, and Scott (2095) considered the effect of various dietary amino acid supplements on serum cholesterol levels of chicks. The addition of L-arginine or the combination of L-aspartic acid and DL-serine caused a significant decrease in serum cholesterol. (This work follows Illinois and other findings that level of diet protein frequently has an effect on cholesterolemia and suggests the importance of proper amino acid balance.)

Amino Acid Study

A novel method of studying amino acid essentiality was presented by Ousterhout (2128) of the University of California. The technique was to delete single amino acids from free amino acid diets and then observe growth and survival time patterns. The resulting periods, (1) rapid weight loss, (2) long period of stable weight and (3) rapid weight loss followed by death, were characteristic of all essential deficiencies; however, the loss in weight during the first period and the length of the second period varied with the missing amino acid. Deficiencies of isoleucine and valine resulted in death in less than 20 days while deficiencies of lysine and histidine allowed chicks to survive over 50 days (median survival times). (These differences are not believed by Ousterhout to result from differential amino acid biosynthesis, thus variation in tissue requirement, metabolic destruction, or excretion pattern may be important. Another factor could be variation in toxicity by the amino acid imbalance created due to deletion of an individual amino acid. This work helps defferentiate maintenance requirement from production (growth or eggs) requirement where all of the essential amino acids are usually looked upon as being equally essential).

The requirements of the adult rooster for glutamic acid, histidine, lysine and arginine were determined by Leveille and Fisher (2099) of Rutgers University. Glutamic acid and histidine were found to be non-essential while lysine and arginine were found to be essential for maintenance of nitrogen balance in the adult rooster. The lysine and arginine requirements were found to be approximately 117 and 121 mg. of amino acid per kilogram body weight per day, respectively.

(It might be pointed out that studies with the rooster are convenient as a guide to maintenance requirements of the hen. Thus egg production requirements do not conceal the true requirement of the bird. This is not to say that the rooster is unworthy of research on his own merits.)

VITAMIN E-SELENIUM: Machlin, Meisky, and Gordon (2105) of Monsanto Chemical Co. found that aerating various fats such as cottonseed oil at 160-170° C. for several days resulted in death of chicks within two weeks due to encephalomalacia, when 20% of the heated fat was employed in a purified diet. The addition of 100 I.U. vitamin E/lb. or 0.05% Santoquin (1,2 -dihydro, -6-ethoxy-2,2,4-trimethylquinoline), but not 0.05% BHT (butylated hydroxy toluene), prevented the encephalomalacia.

The cause of the problem apparently was complete destruction of natural vitamin E by aeration and heating. In the absence of dietary vitamin E, the linoleic acid present in the various fats resulted in increased demand for a suitable biological antioxidant like vitamin E or Santoquin to control peroxide activity. The deleterious effect of the fats was proportional to linoleic acid content.

Bieri and Briggs (2033) of the National Institutes of Health concluded that in the presence of dietary selenium, α-tocopherol has no biochemical function in the growing chick other than that of a non-specific antioxidant. This conclusion was based upon apparently normal growth and commencement of egg production of New Hampshire chickens in the absence of dietary vitamin E, provided 0.5 ppm selenium was present.

Analyses of tissues from six-week-old chicks fed the vitamin E-free diet revealed no evidence of α-tocopherol or tocopherylquinone. Vitamin E was also not detectible in eggs from E-free hens.

Ferguson, Creger, Mitchell, Atkinson, and Couch (2066) of Texas Agricultural Experiment Station studied the possible effectiveness of selenium in improving hatchability of turkey eggs. Under conditions where vitamin E increased hatchability 12-18%, selenium had no effect. Thus it was concluded that selenium has no vitamin E-like activity with regard to turkey embryonic development or hatchability, under the conditions of the study.

TRANQUILIZERS - GROWTH STIMULANTS: Fritz, Wharton, and Classen (2070) of Dawe's Laboratories described some of their experiments on the use of tranquilizers, sedatives and goitrogens in practical rations for broiler production. It was indicated that the use of 2 mg. benactyzine or 1 mg. reserpine per pound of ration resulted in small increases in growth rate and feed conversion. The use of .1% sodium bromide resulted in maximum growth stimulation.

It was suggested that the effectiveness of sodium bromide might have been through sedative rather than nutritional activity. No advantage was found for goitrogenic compounds for the stimulation of growth rate. Materials tested included carbimazole, methimazole, thiouracil, and 5-iodo-2-thiouracil. Thiouracil had the most detrimental effect on weight gains and feed conversion. The addition of thyroprotein or diethylstilbestrol did not lessen the detrimental effects of the goitrogens.

Workers at the Smith, Kline, & French Laboratories, Philadelphia, reported the effect of chlorpromazine hydrochloride (SKF No. 2601-A) on rats deficient in vitamin B_6 or biotin. The B_6 work was reported by Mathues, Herndon, Parmelee, Van Loon and Greenberg (2110). The biotin studies were reported by Dick, Greenberg, Van Loon, Herndon and Cook (2056).

Preliminary studies had indicated that chlorpromazine improved growth and general well-being on nutritionally inadequate diets. The present reports indicated that chlorpromazine improved growth rate on vitamin B_6 deficient diets, but had no effect with B_6 supplemented rats. Conversely, chlorpromazine depressed the growth rate of biotin deficient animals, but not the biotin supplemented animals. Thus it appears that this tranquilizer affected the probable requirements of the rat for two water-soluble vitamins differently. Considering the many metabolic functions of vitamins, these results undoubtedly have some metabolic explanation.

NUTRITION - DISEASE RELATIONSHIPS: Two papers were given regarding interesting work being conducted at Rockefeller Institute in New York City by Wood and Schneider (2145, 2176). These workers are attempting to isolate from natural products a factor shown to counteract death in a susceptible strain of mice due to a specific Salmonella infection. They term the factor salmonellosis resistance factor (SRF).

The presence of the factor in variable quantities in wheat, egg white and other materials is apparently due to microbial synthesis during fermentation, rather than an intrinsic factor in the product.

Chemical fractionation of the SRF has been accomplished. Extremely potent fractions have been isolated, such that less than 1 mg. will protect 10 mice for several days against toxicity due to the infection.

SRF is believed to be acidic in nature, and ashing destroys its activity. It is not an antibiotic. It is interesting that other strains of mice do not require this factor for protection against the infection, showing that in essence disease resistance is an important genetic function. This suggests increasing importance for nutrition in helping combat genetic and infectious problems.

In discussing the significance of this work, Dr. Schneider stated that it illustrated the need for increasing control of environmental and other related factors in research of the future. Thus it will be necessary to study specific variables and eliminate the many other variables always present in experimental work.

Vitamin B_6 Research

Mihich, Lenaz, Leanard and Nichol (1670) reported that Sarcoma 180, a tumor, could be implanted and would grow in mice receiving a complete diet. However, when vitamin B_6 was deleted from the diet, the tumor

NEW EQUIPMENT—Ready for the return trip to Eastover, S.C., with an order of new equipment purchased from A. T. Ferrell & Co., Saginaw, Mich., manufacturer of Clipper equipment, are these two semis owned by F. C. Hill Gin Co., Eastover feed, seed, grain and fertilizer firm. Included in the shipment are Clipper cleaners, dust collectors, conveyors, elevators and other machinery.

could not grow and completely regressed in most cases.

In 23 successive transplantations of the B_6 dependent tumor into mice receiving the B_6 deficient diet, it was possible to develop a subline of the tumor which grew on the host in the absence of B_6. These workers wondered if the adapted tumor was capable of synthesizing B_6, but on analysis found that both tumors contained about the same amount of B_6. Perhaps the tumor requires a factor which is dependent on the presence of vitamin B_6.

Hill and Garren (2086) studied the effect of calcium and phosphorus levels on susceptibility to transplanted lymphoid tumor, RPL 12. Increasing the level of defluorinated rock phosphate in the ration resulted in greater mortality due to the tumor.

In a later experiment it was discovered that increasing the calcium level did not increase the susceptibility; however, increasing the phosphorus level did increase susceptibility to the tumor. (Normally one would not expect that increased phosphorus would produce such a result. However, these results remind us how important nutritional factors can be in modifying a disease process.)

CALCIUM IMBALANCE: A basic rule in nutrition science is to supply enough of each required nutrient, while attempting to avoid any nutrient excesses which might produce an imbalance. Unfortunately, many have tended to discount the potential danger of excesses, and thus waste has frequently occurred even in the absence of clinical symptoms.

Dr. G. K. Davis of the Florida Agricultural Experiment Station, brought this out very well in reviewing the effects of high calcium intakes upon the absorption of other nutrients. He pointed out that high calcium levels can result in decreased phosphorus, manganese, iron and zinc absorption.

With ruminants, high calcium has been shown to depress protein and energy digestion. Excess calcium reduces the availability of energy from fats of high melting point, probably due to increased formation of nonabsorbable insoluble soaps. The development of parakeratosis in swine results from zinc deficiency, which is aggravated by excess calcium levels.

The fact that calcium may render another nutrient unavailable in the gut undoubtedly means parallel loss of calcium due to the formation of insoluble complexes. An optimum intake of a nutrient has been casually defined as somewhere between too much and too little. However, the above relationship between calcium and other nutrients illustrates the fact that most nutrient requirements are interrelated.

(Finding the requirements of nutrients as related to over-all nutrient balance will add a new dimension to nutrition research. While the area of nutrient interrelationships is not a new concept, the field will require much development and application to practical feed formulation. At this time, we generally formulate diets according to tried and proven procedures. However, with the use of electronic least-cost formulation methods, and the probable development of a wider range of feeding ingredients, these interrelationships will require much detailed consideration.)

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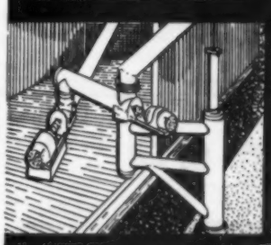

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With fine products like these and an exclusive trading area in which to sell them, we think we have the finest program available anywhere.

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Clarence Schmieding

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Nutrition, Marketing, Carcass Quality Discussed at Beef Cattle Short Course

By DR. T. J. CUNHA
University of Florida

GAINESVILLE, FLA.—A total of 467 attended the two and a half day Beef Cattle Short Course at the University of Florida recently. They came from three foreign countries (Cuba, Guatemala and Iceland) and eight states (Florida, Georgia, Alabama, Indiana, Missouri, Nebraska, Texas and Virginia).

Dr. W. H. Hale, Chas. Pfizer & Co., Inc., Terre Haute, Ind., discussed Tran-Q for beef cattle feeding. He stated that an average of 21 trials showed the following increases over lots not receiving Tran-Q (hydroxyzine). Tran-Q increased daily gain 8.1% and increased feed efficiency 7.4%. The added return per head was $4.83 with carcass grade being slightly higher for the cattle fed Tran-Q.

No sedation has been obtained with Tran-Q in safety tests. No side effects have been observed from feeding 10-50 times recommended levels of Tran-Q to either cattle or sheep. A level of 2.5 mg. per head per day is recommended for both beef cattle and sheep.

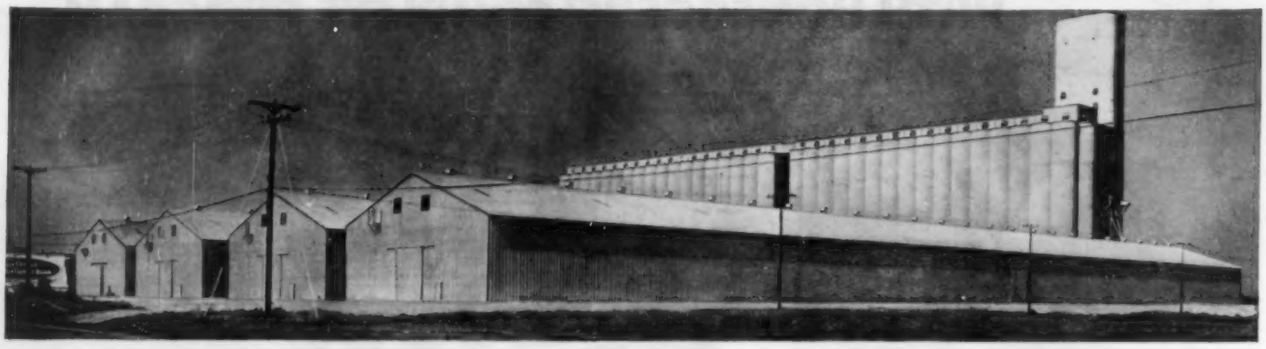
Tran-Q has been shown to give a growth-promoting effect when used alone, and it has an additive action when used in combination with stilbestrol or terramycin or both.

The U.S. Food and Drug Administration has approved the feed use of Tran-Q by itself or with stilbestrol, Terramycin, or the combination of Terramycin and stilbestrol for beef cattle. For sheep, present approval embraces only Tran-Q in feeds.

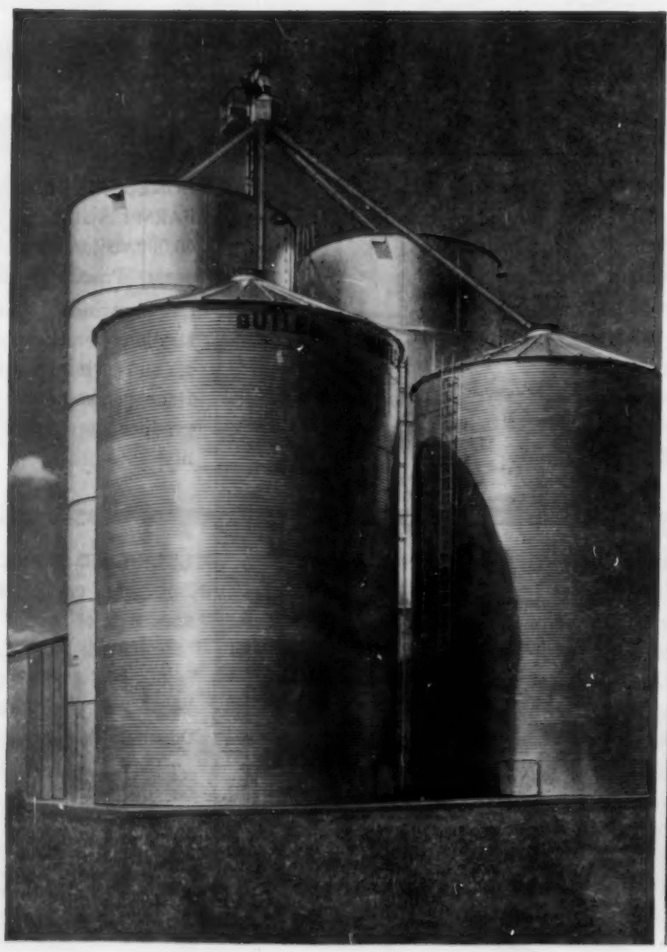
The outlook for the beef cattle industry was given by Richard B. Hunt of the Doane Agricultural Service, St. Louis. He stated that the cyclical price decline will strike at feeder-stocker cattle prices in the latter part of 1960, and will adversely affect fed cattle prices in 1961. He expected fed cattle prices to hold near last year's average through 1959 and 1960. For 1961, the average fed beef price will likely drop $3 cwt., and for 1962, a further decline of $4 is anticipated.

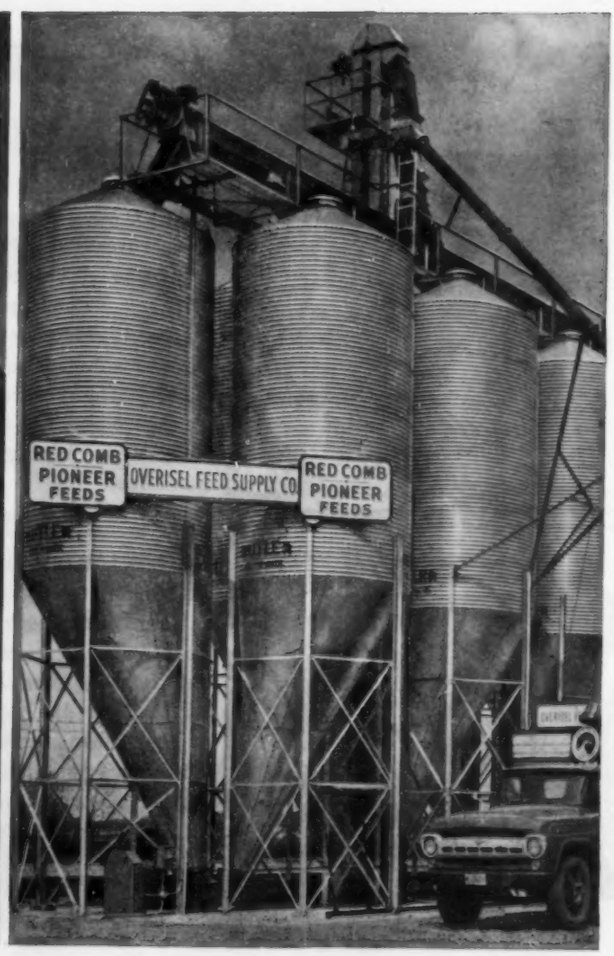
Protein Deficiency

Dr. A. C. Warnick of the University of Florida staff reported on the effects of a protein deficiency in beef cattle. He reported that yearling heifers fed 10% of NRC protein re-



Name your storage problem has the structures and





quirements lost .72 lb. daily, did not show estrus and did not ovulate, indicating inactive ovaries.

The heifers fed 30% of NRC protein requirements just maintained their weight and did not reproduce normally. Some of the heifers failed to show heat or ovulation, and could not be bred while others bred but did not become pregnant.

Protein supplementation increased the calf crop 25% with 3-year-old cows grazing frosted grass pasture during the winter. It also caused them to breed 42 days earlier.

Other data with cows showed that a lack of protein reduced appetite and reproductive performance by reducing the manifestation of heat and the possibility of heat and ovulation.

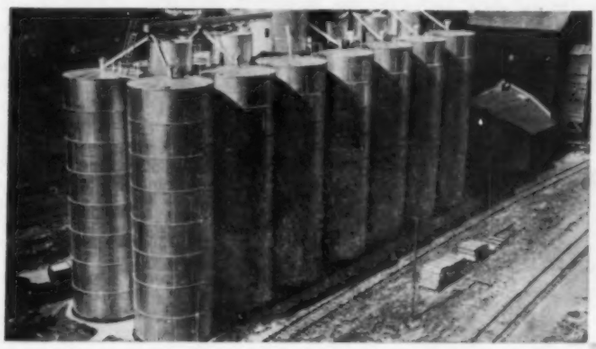
Ken R. Fulk, executive secretary of the American Shorthorn Assn., discussed carcass improvement in beef cattle, and emphasized that we should currently try to produce cattle that will yield at least 12 in. of loin eye per 1,000 lb. live weight with ¾ in. outside fat in prime finish and ½ in. outside fat in choice finish.

He stated that very little is known about tenderness and what causes flavor in meat. There also seems to be some correlation between the amount of bone and meat; the more bone an animal has the more meat one might expect.

Dr. R. L. Reddish, University of Florida extension meats specialist, gave the following requirements for a meat-type steer: (1) Weaning weight of 450 lb. at 7 months; (2) gain 100 lb. on 900 lb. of feed, two thirds concentrates and one third roughage; (3) marketable at any age from weaning to 30 months of age; (4) weigh 950 lb. at 16 months of age; (5) have carcass weight of 1.3 lb. per day of age at 12-18 months; (6) have a ribeye area of 2 sq. in. per 100 lb. of carcass; (7) a minimum of 48% of ribs, loin, round and rump; (8) 80% of carcass edible; (9) 6% of fat trim and 14% of bone as a maximum, and (10) a tender and palatable carcass.

Charles E. Bell, U.S. Department of Agriculture, discussed vertical integration and its future effect on the beef cattle industry. He stated the trend towards contractual arrangements will grow. It is within the realm of possibility that small independent producers in some areas might eventually experience difficulty in marketing their animals at an advantage, should contract production reach the stage where it would account for a high percentage of the total production.

It will be increasingly essential that the independent cattleman strive for top efficiency in his operations. In order to compete, he will be more and more forced to adopt the same high standards in management and



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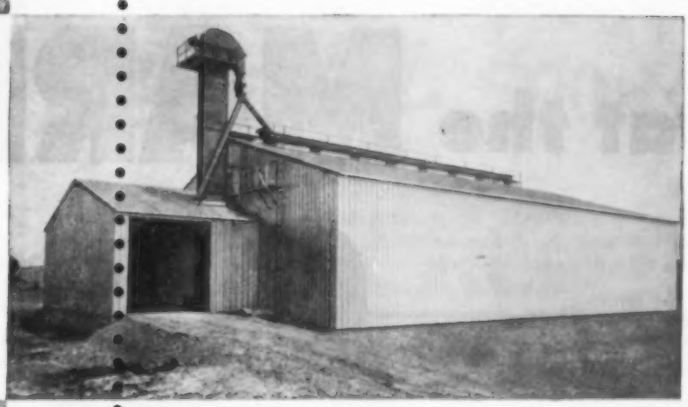

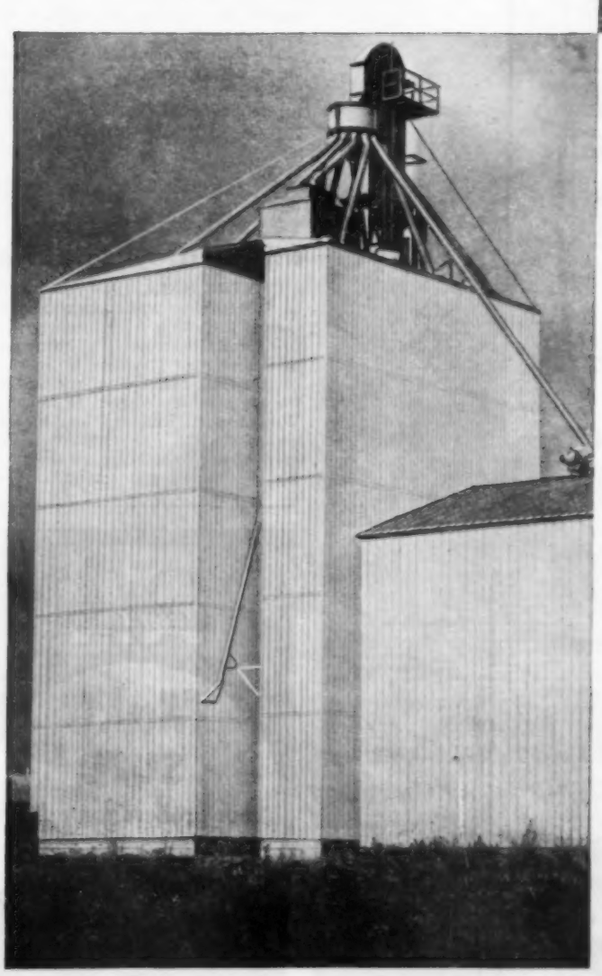

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SHORT COURSE SPEAKERS—Speakers at the recent 8th annual Beef Cattle Short Course at the University of Florida included (left to right): R. B. Hunt, Doane Agricultural Service, St. Louis; Paul Swaffar, secretary of the American Hereford Assn., Kansas City; Charles E. Bell, U.S. Department of Agriculture; Alto Adams, Jr., president of the Florida Cattlemen's Assn., and Dr. T. J. Cunha, head of the department of animal husbandry and nutrition, University of Florida.

marketing skills as his competitors in contractual operations.

He further stated that we will probably see an increasing percentage of the nation's feeder cattle go into large commercial feeding plants each year. We must not overlook the possibility of integration moving into the cow and calf operations. However, he felt that the production of calves will remain largely in the hands of individual ranch operators for a long time to come.

He also felt there would be an increase in father-son partnerships and family corporations as well as ranches and farms owned and operated by large business corporations. He also predicted that the continued development of large commercial feeding plants with assembly line schedules should gradually level out the seasonal fluctuations in marketing receipts and prices.

Evidently, the beef cattle industry will be forced into a closer vertical relationship with respect to production, processing and distribution. Close cooperation will be required between the cattlemen and the agricultural related businesses in the years ahead if the new forces affecting the industry are guided in a manner that will contribute most to the mutual welfare of everyone concerned.

Drying Feeds

Dr. H. L. Chapman, University of Florida, discussed de-watering feeds in the south Florida area, by using a modified and greatly enlarged meat grinder. The process involves reducing the moisture content in high moisture materials from approximately 85-90% moisture down to 70%. This produces a forage of optimum and uniform moisture content for ensiling, which could be dehydrated or which could be fed as fresh material. This method is still in the experimental stage and much more study is needed before definite recommendations can be made on its use.

G. T. Stack of Tampa, Fla., discussed selling cattle to Latin American and other countries. The leading countries (in order of importance) in importing breeding cattle from the U.S. during the 1947-57 period were Mexico, Venezuela, Cuba, Colombia, Canada, Israel, Dominican Republic, Guatemala, Ecuador and China. During 1958, the following numbers of cattle were exported from the U.S.: Brahman, 10,843; Hereford, 4,100; Santa Gertrudis, 1,101; Angus, 947; Charolaise, 503; Brangus, 315; Shorthorn, 206, and Charbray, 180 head.

The export cattle market is growing in importance, and it needs to be emphasized that only quality cattle should be shipped in order to keep foreign countries interested in coming back for more animals.

Pelleting

Pelleting of feeds was discussed by a number of speakers. In some trials it increased rate of gain and feed efficiency, whereas in others, it did not. All agreed that under some conditions it will be beneficial to use pelleted feeds.

The main problem is the cost of pelleting which many times causes the benefits to be derived from pelleting to be over-shadowed by the extra cost involved. As engineering developments result in a decreased cost of pelleting feeds, there should be more use of pelleted feeds on the farm.

Mill Destroyed by Fire

CENTRE HALL, PA.—An estimated $100,000 loss was sustained by the Centre Hall Mills here recently when fire totally destroyed the firm's mill and contents. Thomas R. Searfoss, Centre Hall, manager of the business for his brother, Warren H. Searfoss, Williamsport, said the loss included about $15,000 in merchandise. Covered in the remainder are the building, machinery and equipment.

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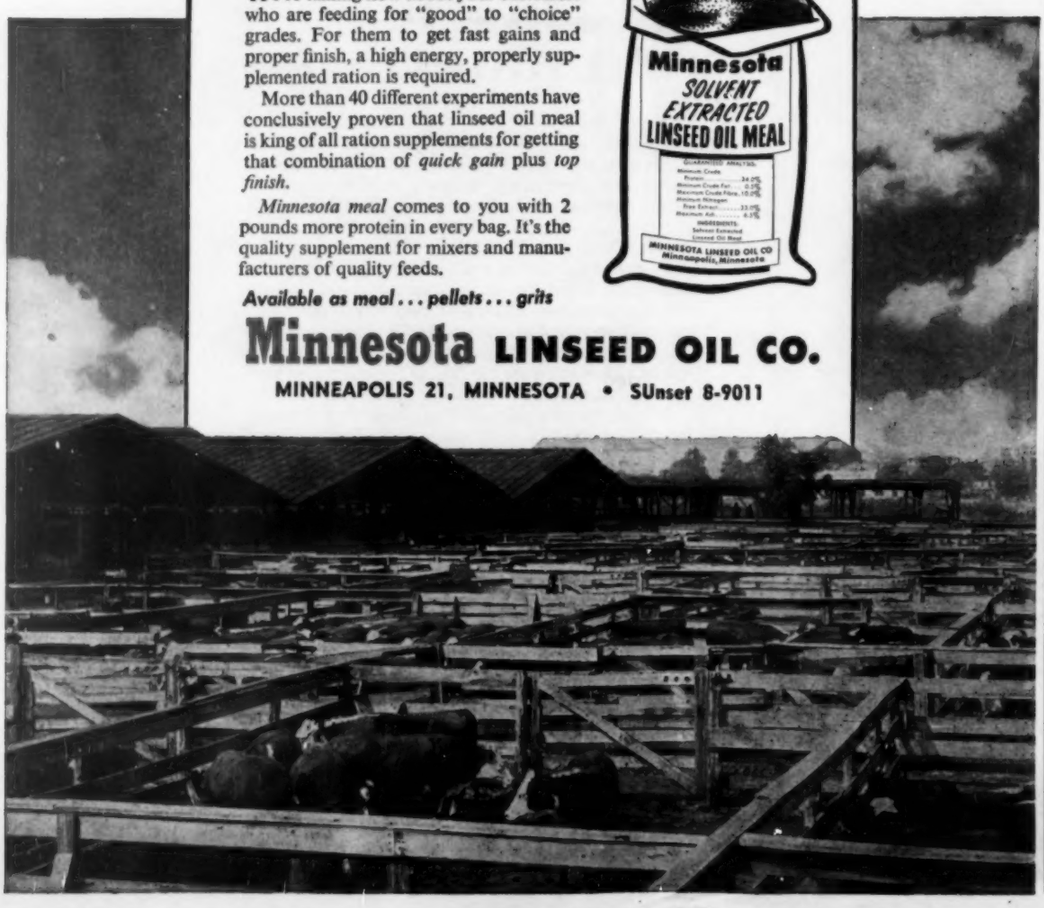

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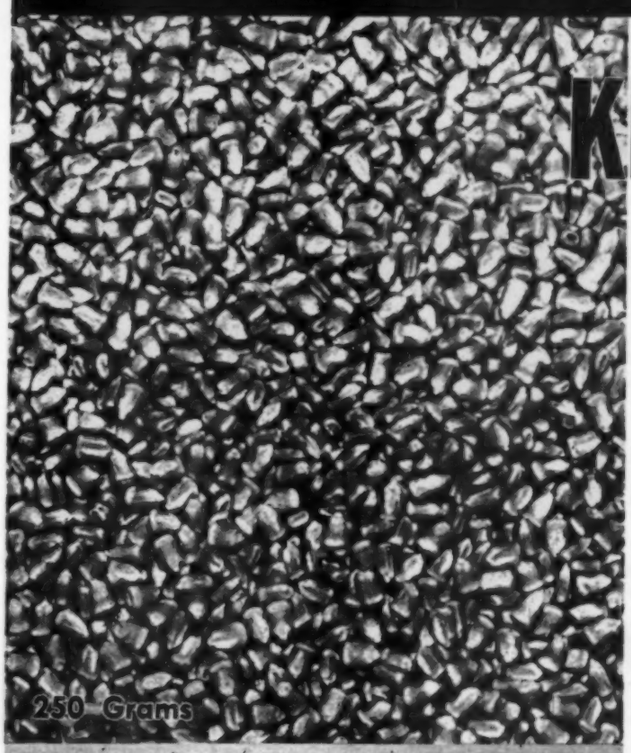

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And now the new 500-RC with the new king-size sample tops them all! Here's how the Steinlite 500-RC gives you more of everything you need for better moisture testing:

NEW KING-SIZE SAMPLE—Now you get a better, more representative test of the entire load with the big new 250-gram sample. Nothing to grind . . . retest the sample easily or return it to the load totally undamaged.

INSTANT ACCURACY—Make perfect tests of grain right from the drier or samples of mixed moisture content in seconds . . . no need to wait hours for moisture equalization.

FAST, EASY OPERATION—No chance for human error, you just drop the sample in the test cell, and check the automatic meter reading . . . no buttons to push, no dials to adjust. One scale for all moisture ranges.

IMPROVED FEATURES—New, large 9-inch meter . . . easy-to-read, built-in, eye-level thermometer . . . new round funnel with automatic reset . . . redesigned circuit with overlap elimination.

GUARANTEED PERFORMANCE—Your new Steinlite 500-RC is furnished with a full year's factory guarantee and free loaner service is provided for the life of the Steinlite. You're assured of having topnotch moisture testing facilities at all times.

Protect your grain profits with the most accurate moisture testing possible. See your Seedburo representative or write us for complete information on the Steinlite 500-RC and the generous trade-in allowances being offered for your present equipment.

Seedburo

(SEED TRADE REPORTING BUREAU)

EQUIPMENT COMPANY Dept. FS-5, 618 W. Jackson Blvd., Chicago 6, Ill.

Peak Hog Price Expected in June

LAFAYETTE, IND. — Hog prices are likely to rise until they reach summer highs about June, and then they probably will work irregularly lower, perhaps reaching an average of $14, plus or minus $1, for November and December.

This is the forecast of a group of Purdue University agricultural economists, who also predicted the following in a recent farm news letter:

- A new look at the cattle situation indicates more stability and more profits from feeding operations than seemed probable earlier. Some price weakness may result from prospective heavy marketings in May.
- Broiler prices in the immediate future will remain 3 to 4¢ below levels of a year ago.
- Egg prices will remain weak for the next several weeks, with the seasonal rise coming after June.
- Unusual strength in corn prices can be expected through August. Soybean prices probably will continue steady to strong in the next few weeks.

Expansion Continues

BOONE, IOWA — Installations of aeration and temperature systems by grain firms continue to expand. Evidence of the trend is a recent report by Rolfes Grain Aeration Companies, Boone, which shows 81 installations in 17 states.

The list shows 20 installations in Iowa and 14 each in Nebraska and Kansas. Other states and the number of installations for each are as follows: Illinois, 6; South Dakota, 5; Indiana, 4; Missouri, 3; Ohio, 3; Texas, 3; Minnesota, 2; Arizona, Arkansas, Maryland, Michigan, North Carolina, Oklahoma and Virginia, 1.

Protein Blenders Sales, Profits Show Increase

IOWA CITY, IOWA — Protein Blenders, Inc., Iowa City, reported higher sales and increased profits for the firm and its four subsidiaries at the recent annual stockholders meeting at the Maplecrest cold storage plant here.

Charles U. Kelly, president, told stockholders the consolidated net profit of all five companies was ahead of last year's profit and was equal, after taxes, to $1.15 for each of the 109,000 shares of stock issued and outstanding. Total sales were $9 million, compared with $8.5 million the previous year.

Reelected as directors with Mr. Kelly were C. Urban Kelly, chairman of the board; Charles Gorrell, assistant president, and William I. Cushing, vice president.

Paul Harvey, general sales manager, said the increased sales had come mainly from concentration of sales efforts in eastern Iowa and that he plans an addition of from 30 to 50 Protein Blenders, Inc., dealers during 1959.

R. Alan Williams, vice president in charge of marketing, reported on the acquisition of a new corporation, West Branch poultry products, a firm specializing in gift-packaged turkeys.

It was also reported that the Maplecrest Turkey Farms' new cold storage facility in Iowa City had passed through its first year of operation successfully.

Mr. Cushing reported that a new 500-lb. trip scale had been installed at the Iowa City plant to speed up flow of materials. He also stated that large capital improvements are under consideration for installation in the Iowa City plant.

C. Urban Kelly reported the current sales of a $1 million convertible bond issue were moving well.

Morrell to Process New Animal Food

PASCAGOULA, MISS. — A new animal food developed by laboratories of the John J. Morrell & Co. meat packing firm in Ottumwa, Iowa, will be processed by Bluff Creek Canning Co., a Morrell subsidiary, at its Vancleave, Miss., plant near Pascagoula.

T. L. Murphy, president of Bluff Creek, said the local plant is now being readied to go into production. The product will be manufactured from scrap fish and dry ingredients.

A lease is being negotiated for a 60 by 120-ft. building. Mr. Murphy noted that the initial operation will be somewhat of a pilot plant with nominal employment initially.

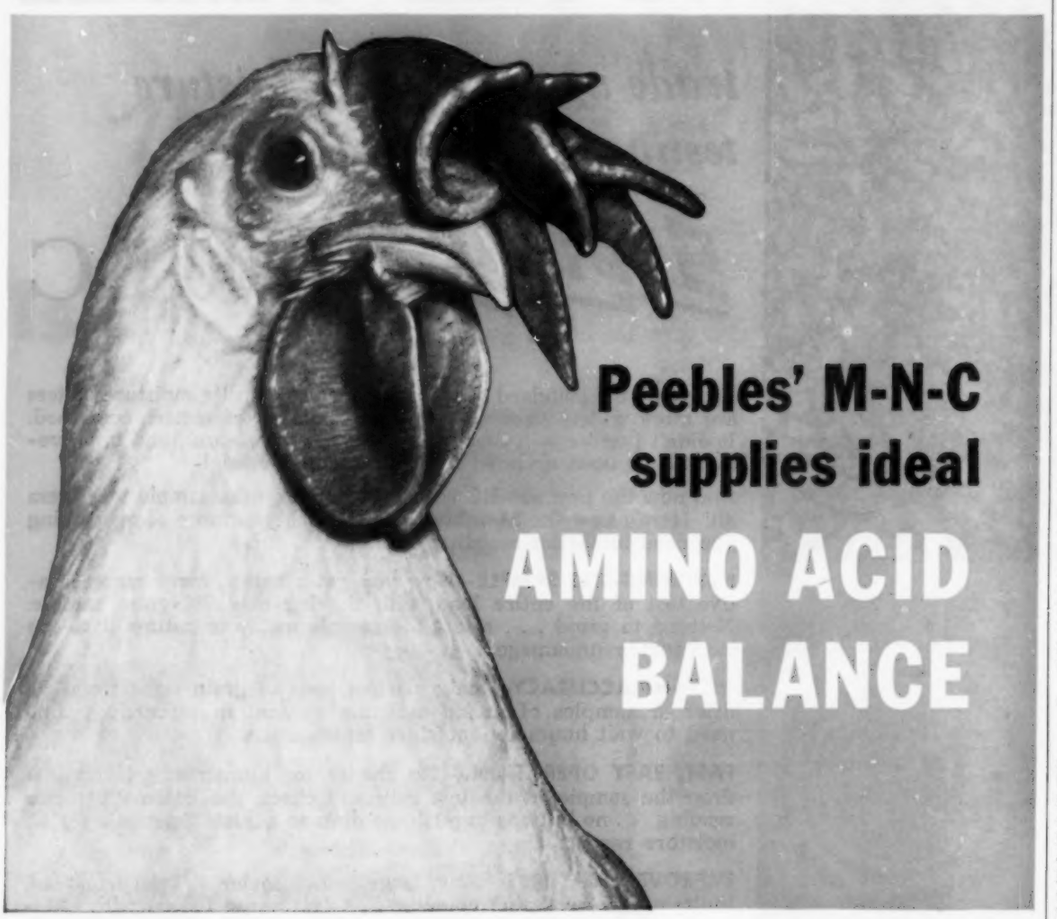
"However," he said, "if the consumer market develops for this new animal food, and we believe it will, the operation will be greatly expanded and employment will be substantial."

The new product, packed in 50-lb. polyethylene bags, will be marketed in northern and midwestern areas of the U.S. Mr. Murphy said the plant will be in operation by fall.

Machinery for the operation has already been purchased and will be shipped to Pascagoula as soon as a lease is signed. A company official said that since it is a new process some machinery used will have to be fabricated on the site.

To Build Warehouse

AUBURN, MAINE — The Auburn appeals board recently denied a building code variance to the Eastern States Farmers Exchange for the construction of a warehouse to enlarge its operation as a distribution center for this section of Maine. Otto H. Wallingford, Auburn, a director of the exchange, announced later that building plans would be revised to conform with city fire zone regulations in order that the construction job can be carried out.



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In addition, M-N-C is concentrated to give you, pound for pound, 50% more non-lactose nutrients. Just 2% M-N-C supplies the same amount of Whey factor and other growth-promoting elements as 3% whole dried whey.

Peebles' exclusive spray-dried process assures uniform high quality. M-N-C's smooth, even texture provides uniform color and even distribution in mixed feeds.

Find out how M-N-C can answer your amino acid requirements and give your feeds added nutritional value. Write or wire today for complete information.

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Broiler growers everywhere are pretty well agreed that Dr. Salsbury's UNISTAT is the best coccidiostat on the market today. And many have also learned that it scores highest on the "profit test." That is, they make more money using UNISTAT than any other coccidiostat. Why? Because UNISTAT not only provides superior protection against the disease—it also gives growers other important profit benefits, such as **better coloring, faster growth,** and **increased feed efficiency.** Of these, **feed efficiency** is the most necessary to profits. Birds *must* make top gains per pound of feed. Records indicate that UNISTAT passes this test with flying colors. Thousands of flocks have demonstrated over and over again that UNISTAT-fed broilers *need less feed per unit of gain.* This, added to to all the other benefits of UNISTAT, can materially increase your customers' profits.

EFFICIENCY UP 10 POINTS WITH UNISTAT

Here's a typical letter from a grower (name on request) who raises a million broilers a year. He says, **"Our feed efficiency has improved more than 10 points** *over the same period of last year while coccidiosis has not been a problem with us. We feel that the pigmentation, finish and quality of our birds has been greatly improved with UNISTAT feed. UNISTAT is now in our ration 100%, but we field-tested a number of coccidiostats before we made this change."*

This grower, like thousands of others, has discovered that UNISTAT scores highest where it counts most: *On the profit side of his record book.* That's the test that really counts. And that's why you'll want Dr. Salsbury's UNISTAT in all your feeds for chicks, broilers and growing chickens. It can build bigger profits for you and your customers.

Please write for Feed Manufacturers Guide and further information on UNISTAT

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NATIONWIDE SERVICE TO THE FEED INDUSTRY

JOE BROOKS

BY AL P. NELSON

You Have to Measure Sales Appeal

Herman Wendt had just finished doing the morning chores in his dairy barn that rainy spring morning, and now he came into the warm farm kitchen, redolent with odors of baking bread, coffee cake and cookies, for his morning coffee.

At his plate, his dutiful, buxom wife had placed the weekly edition of the Hansen's Creek Poultry, Butter & Egg Gazette. The newspaper was named in honor of the dairying and poultry interests because the county ranked highest in the state in production of those items.

"Ma, you sure make wonderful coffee cake," said Herman tasting the cake and then sipping some steaming hot coffee. "I'm glad I made that survey in your home town before I married you. Everybody I asked said you were a good cook."

Mrs. Wendt put her hands on her hips. "You mean you went around and asked neighbors about me—behind my back?"

"Well," Herman defended, "didn't you ask about me?"

His wife laughed. "W-well, I guess I did a little. But I'm glad you like my cooking. I'm proud of it."

Herman opened the newspaper and began to read while Mrs. Wendt checked her oven.

"That darn Joe Brooks!" called out Herman, suddenly. "What the heck won't he think of next?"

Mrs. Wendt came over and looked at the open newspaper.

"He's running a Low Pressure Sales Day next Tuesday," Herman said. "Who ever heard of such a thing?" Then he started reading a little of Joe's copy, as follows:

"In this day when so many people are complaining about high pressure selling in feed mills and stores, maybe it's time to go to the other extreme. We are going to try it, because we want to slow down and take a rest, too.

"So, for one day—next Tuesday—we are going to put on a Low Pressure Sales Day. Be prepared for a few surprises.

"So we can really rest each of us is going to take a tranquilizing pill after we get to work in the morning. If you come to see us on that day, you may find some of us sleeping on feed sacks, or in chairs, or just sleeping leaning against the wall.

"So please don't expect fast service—like you have been getting from us in the past. We don't care how much merchandise we sell."

Mrs. Wendt frowned. "Now, that is a lie. How can Joe Brooks say that? Every business man wants to sell more merchandise."

"This is a stunt, Erma," grinned Herman. "I'll read some more."

He held the newspaper closer to him, and read: "We'll talk with you all day if you want us to. We'll take time to go out and have coffee with you—if you pay for it—and we won't hurry back to the mill and the store.

"We won't ask you to pay overdue bills, and we won't suggest that you buy a single extra article than that which you asked for — won't that be a surprise?

"We have arranged for the O'd Country Fiddlers (three of them) to come and play nothing but slow dreamy music all day long, the old sentimental stuff like Let Me Call You Sweetheart, Auld Lang Syne, The Old Oaken Bucket and others. You can sit on feed sacks with us and just rest and relax and listen to music all day if you want to.

"Oh, yes, we'll have some free eats and refreshments. Milk, not coffee, and all the makings for five or six kinds of sandwiches, ham, cheese, tuna fish and some more. But don't expect us to serve you. This is a do-it-yourself deal. You'll have to help yourself. We'll just be relaxing."

"Well, now isn't that the limit?" exploded Mrs. Wendt. "Who ever heard of such a business? I can tell Joe Brooks right now that such a lazy example isn't going to bring more customers to his store. And I thought he was such an up and coming feed dealer."

"Wait a minute!" cautioned Herman. "For every person who feels

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MULTIWALL SACK
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Effective . . . . . the Hudson Pulp & Paper Corp., 477 Madison Avenue, New York 22, New York warrants and guarantees to replace without cost in a future shipment or (at its option) to refund to the purchaser the cost of each and every Hudson Multiwall Sack which bursts, tears, splits, or otherwise fails in the course of packing and/or closing.

Get USE from every bag you buy

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FIELD REPORT

TO: B.D.
Re: [redacted]'s Order

Herewith [redacted]'s carload order. Looks like beginning of good volume from this account. Their P.A. really opened up when I showed him our Written Guarantee policy. Explained to him that every Hudson bag he pays for is guaranteed to be a bag he can use. Or we pay!

He'd never known anything like this before. Please be sure to include validated Guarantee Certificate with your confirmation. Also give him full details on our Design Service. He's interested.

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like you do, there'll be ten that'll be curious as all heck—like me, for instance. I'm gonna get to that Tuesday Low Pressure Sale. I just wanna see how Joe Brooks and his crew look when they are filmed in slow motion, or leaning against a wall half sleeping. I'll needle the daylights out of them fellers just to try to shake 'em out of that low pressure trance. And I'll bet a lot of other fellows will feel the same as I do."

"Oh, you men!" snapped Mrs. Wendt, irritably. "You have such a crazy sense of humor. Why don't you stick to your work instead of fooling around on somethiing like this Low Pressure Sale?"

Herman chuckled. "Well, you know, Ma, I learned somethin' a long time ago, and it has kept me from going crazy sometimes. That is—take a little time out for fun. And if you can mix it with business—like at this Low Pressure Sale of Joe's—Hey, look what he's got at the bottom of the ad!"

"What?" asked his wife.

Herman read. "It may take us ten minutes to ring up a sale at this Low Pressure Sale, because if those tranquilizer pills work we'll really be walking mighty slow. But if you want to come in and see us on Low Pressure Sales Day we'll do the best we can to serve you, even if you have to shake us a couple of times to wake us. To pay you for your trouble, we have marked many of our good shelf items 10% off. But we'll be too darn sleepy to help you find 'em, you'll just have to do it yourself. Joe and his low pressure gang."

Herman laughed. "Just think of the farmers that are reading that ad this week, and all of 'em figuring to go in next Tuesday and take a look at this slow moving gang of Joe's. I'll bet his store traffic will be twice what it is on a normal day, and before the day is over he'll sell a whale of a lot of merchandise, whether he's sleepy or not. This sale I gotta see, woman."

Dura-Buket Distributors

EAST ST. LOUIS, ILL. — Dura-Buket division of National Oats Co., East St. Louis, has announced two stocking distributors for Dura-Buket in Tennessee. Lewis Supply Co. will serve the Memphis territory and Tennessee Machinery Co. will serve the Nashville area. The two firms will handle and stock the plastic elevator bucket manufactured by the Dura-Buket division.

FEED FIRM INCORPORATES

LONG GROVE, IOWA—Articles of incorporation were filed recently with the Scott County Recorder for Bulk Feeds, Inc., Long Grove. Capitalized at $50,000, the firm was established to deal in livestock, grains, feeds and milling products. Officers include O. Theodore Driskell, Davenport, president and treasurer, and James D. Driskell, vice president and secretary.

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Officers of Buffalo Exchange Elected

BUFFALO—Directors of the Corn Exchange of Buffalo elected Everett H. Flinchbaugh as president of the exchange at the annual meeting April 28. Mr. Flinchbaugh, vice president of the Connecting Terminal Grain Elevator Corp., succeeds Gerald W. Durant.

Other officers elected are: Vice president, Irving M. Hyland, assistant vice president of Cargill, Inc.; treasurer, George J. Kaiser, Buffalo manager of Archer-Daniels-Midland Co.

Frank Catanzarite was appointed executive secretary and traffic commissioner; Richard J. Murray, assistant treasurer, and Mrs. Lucy R. Leonard, assistant secretary.

On April 27 three new directors were elected for three-year terms. They are Gustav M. Loebel, Stanley A. Tirrell and Roger C. Greene. Mr. Loebel is vice president of the Continental Grain Co., Mr. Tirrell is manager of the Pillsbury Co.'s grain division in Buffalo, and Mr. Greene is vice president and general manager of the grain division, Russell-Miller Milling Co. They succeed Gerald W. Durant, Charles R. Coad and Norris W. Krueger.

Appointed in Southeast

WALFORD, IOWA—Gaddis Bros. Mfg. Co., Walford, manufacturer of bulk delivery equipment, has announced the appointment of G. C. Miller as district representative for the southeastern sales territory. He will reside in Gadsden, Ala., and will cover North and South Carolina, Florida, Georgia, Alabama, Mississippi and Tennessee. Mr. Miller was formerly associated with Truck Equipment Co., Atlanta, Ga., as Alabama sales representative. Bill Gaddis, president, said the appointment is the result of increased volume in the southeastern territory.

Personnel, Location Changes Announced

CLIFTON, N.J.—Richardson Scale Co., Clifton, has announced the moving of its Philadelphia regional office, the addition of Alan Farnham to the Philadelphia office staff and the relocation of the western regional office.

Alan Farnham

The Philadelphia regional office is now at 11 Park Road, Havertown, Pa. This office handles all of the company's business in Pennsylvania, Virginia, Maryland and Delaware.

The new address of the western regional office is 1369 Laurel St., San Carlos, Cal., a suburb near San Francisco. Manager of the western region is R. H. Schonfisch.

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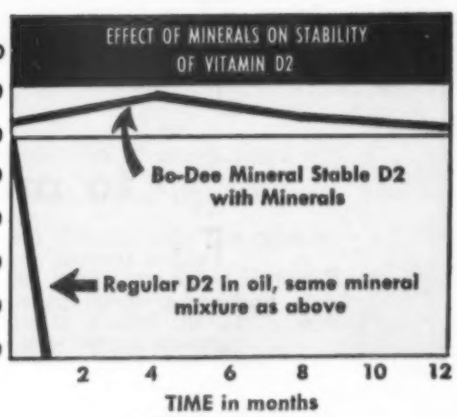
Note: MINERAL STABLE D2 fully present at the end of 12 months. Ordinary D2 practically gone in 30 days.

Ground Limestone	41.23%	Ferrous sulfate	0.50%
Steamed bonemeal	15.00	Copper sulfate	0.15
Tricalcium phosphate	13.00	Manganese sulfate	0.10
Magnesium sulfate	10.00	Cobalt sulfate	0.02
Iodized sodium chloride			20.00%



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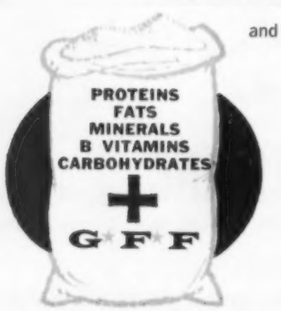

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Virgil Scroggs Heads Right Weight Company

FT. WORTH, TEXAS—Virgil H. Scroggs, vice president in charge of research and formulation for Vit-A-Way, Inc., Ft. Worth, for many years, resigned from that post recently to become president of Right Weight Co., Inc., Ft. Worth, producer of Tox-I-Ton, a treatment for internal parasites of the digestive tract in cattle, sheep and goats.

Virgil H. Scroggs

Mr. Scroggs has been engaged for more than 25 years in mineral requirement and parasitology studies. He is a long-time active member of the U.S. Livestock Sanitary Assn. and the American Public Health Assn.

Appointed national distributor for Right Weight Co., Inc., is Mattingly Distributing Co., St. Louis. E. H. Mattingly, president of the distributing firm, is secretary of the Montadale Sheep Breeders Assn.

Hawaiian Grain Corp. Opens New Elevator

HONOLULU — Hawaiian Grain Corp., owned jointly by Oahu Railway & Land Co. and Albers Milling Co., recently held opening ceremonies marking completion of a new million dollar grain storage elevator at Pier 23, Honolulu.

Participating in the ceremonies were W. F. Dillingham, OR&L president; Fred Hoover, Jr., Albers president; Herbert K. H. Lee, president of the Territorial Senate, and C. Eric Reppun, president of the territory's board of agriculture and forestry. Other Albers officials present for the opening were H. E. Olson, vice president for finance, and G. A. Ensminger, vice president for feed sales.

Sixteen bins, including six interstices, and a small flat storage area have a total storage capacity of 15,000 tons, which is estimated by company officials as enough to handle a 90-day supply at current consumption rates. The slip-form construction method, used for the first time in Hawaii, enabled workers to complete the job in seven days of continuous pouring.

Hawaiian Grain Corp., formed in August, 1958, to service Honolulu feed manufacturers, is an independent organization. It does not import or sell ready-mixed feeds, but sells feed ingredients to the wholesale trade. Albers, like other feed manufacturers, will be served by Hawaiian Grain.

E. F. Margado, formerly an independent grain and feed broker in the San Francisco Bay area and in the Philippine Islands, is manager of the corporation.

In December, 1957, Albers leased the mill operated by Moanaloa Feed Co. as Honolulu Milling Co.

22 Attend Hubbard Feed Training Session

FT. WAYNE, IND. — Twenty-two feed dealers and assistants from three states attended a one-day intensive feed training session held here recently by the Hubbard Milling Co., Mankato, Minn.

Conducting the school were Quentin J. Marsh, manager of the feed division, and Vern Lundin, director of advertising and public relations, both from the home office at Mankato, and Dave Mullin and John McNeal from the company's Marion, Ind., division.

Feed men attending were William Dodds and Bill Karmol, Ottawa Lake, Mich.; George S. Copp, Carson City, Mich.; Virgil Kohring, Albert Lieske and Orren Dehring, Oak Harbor, Ohio; Leo C. Valentine, Frank Thomas, George Hall, Howard G. Horn and H. E. May, Mentone, Ind.; Raymond O. Miller, Johnathan D. Miller and Wilber Christner, Topeka, Ind.; Jerry H. Sauder, Graybill, Ind.; Earl Davidson and Larry Carmichael, Freetown, Ind.; Herbert Clark, Howe, Ind.; Fred Fronek and Robert Dickerhoff, Valparaiso, Ind.; Lester Smith, Sweetzer, Ind., and Martin Ulerick, Hagerstown, Ind.

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Canadian Feed Men Announce Program For Annual Meeting

TORONTO—Feed industry representatives from both Canada and the U.S. will speak at the Canadian Feed Manufacturers Assn. convention June 25-27 at Bigwin Inn, Lake of Bays, Ont., the CFMA has announced.

Frank Graham, Toronto, program chairman, said his committee has just completed the program. The convention this year is being sponsored by the Ontario Feed Manufacturers Assn.

First speaker of the convention will be Prof. J. R. Cavers, head of the poultry husbandry department at Ontario Agricultural College, Guelph. He will discuss "Recent Changes and New Challenges in the Canadian Poultry Industry."

Ralph Bennett, Canadian Department of Agriculture, Ottawa, will talk on "Recent Changes and New Challenges in the Canadian Livestock Industry." The final speaker the first day will be Dr. C. F. Chappel, Eli Lilly & Co., Indianapolis, who will discuss "Tranquilizers, Enzymes, Hormones and the Feed Industry."

Set for the second day, June 26, is an address on "Bulk Feed, Feed Handling and Mixing" by J. D. Johnson, production superintendent, feed division, General Mills, Inc., Minneapolis. Dr. J. L. Krider, vice president, Central Soya Co., Ft. Wayne, Ind., will discuss "Public Relations in Action."

Speakers for the afternoon session the second day are Dr. J. M. Snyder, director of poultry research, Beacon Milling Co., Cayuga, N.Y., and Ralph Everett, director of Empire Sales Training Inc., Miami, Fla. They will talk on "Poultry Feeding of the Future" and "Feed Selling," respectively.

Bill Cunningham, vice president of the CFMA and convention chairman, will welcome the guests June 25, and the Hon. William M. Goodfellow, Ontario minister of agriculture, is expected to bring greetings from the province.

A highlight of the convention will be the banquet the evening of June 26. The banquet follows immediately after the National Council elects officers for the year. D. J. Lyons, Winnipeg, outgoing president of the CFMA, will be chairman of the banquet. Dr. Carl C. Byers, Cleveland, humorist and industrial speaker, will be the speaker.

The final day, June 27, is devoted to the annual golf tournament, which is to be followed by a dinner and dance.

A special program has been prepared for ladies attending.

Committee members under Mr. Cunningham are James Lowe, vice chairman; Norman Hogg, publicity; Frank Graham, program; Jock Appleton, entertainment; Fred Irvine, reception; Ivan Jackson, ladies' program; Jim Ditta, golf; Charles Webster, registration; Ted Sheldrick, transportation, and Harry Wilcock, finance.

Howard Parker

APPOINTED—Manager of the new dog food division of Suprema Mills, Inc., is Howard Parker. His appointment was announced recently by Russell May, president of the Kansas City firm which makes its headquarters at 1300 Union Ave. Mr. Parker formerly operated the John and Howard Parker Training Kennels at LeRoy, Kansas, and other kennels with his father in Canada and Hernando, Miss. More recently Mr. Parker has been in sales promotion work with General Electric.

Alkali Metals Studied In Lamb Feedlot Gains

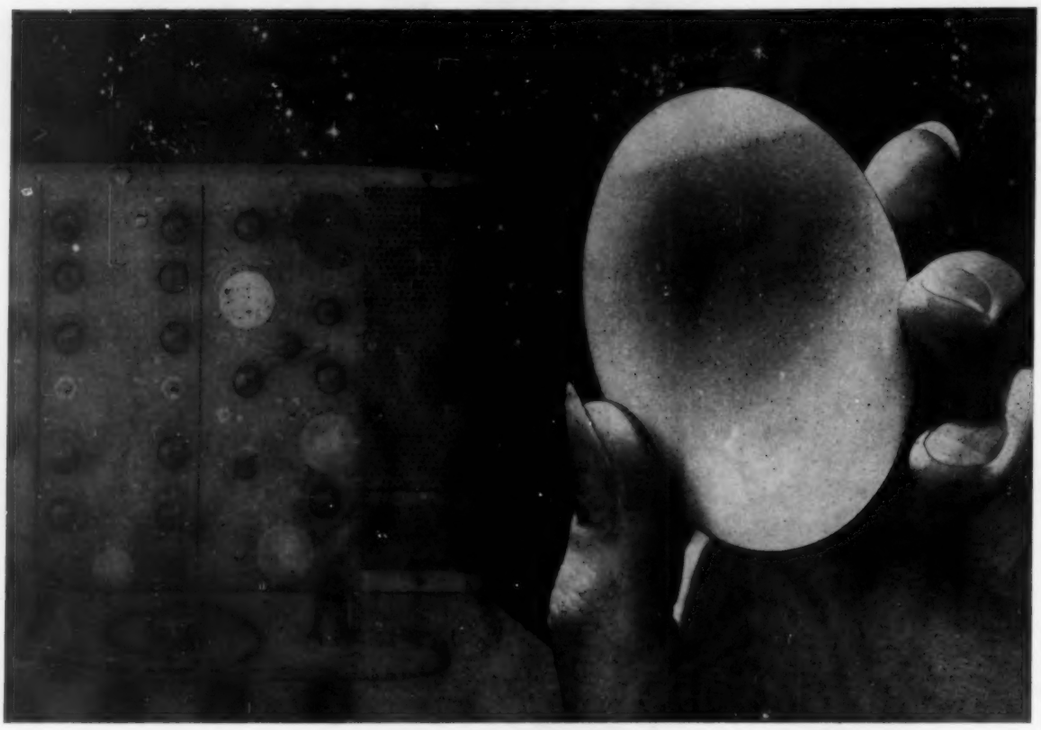
AMES, IOWA — Research centered about the use of alkali earth metals to stimulate lamb feedlot gains is being continued at Iowa State College, according to the college's publication, Iowa Farm Science.

It was reported that in earlier artificial rumen studies potassium rather than sodium proved primarily beneficial to rumen microorganisms in promoting cellulose digestion. This finding was confirmed in the feedlot when lambs fed potassium in a synthetic type diet outgained those fed sodium.

Researchers noted that the proportions of sodium and potassium which best stimulated cellulose digestion in the artificial rumen also had top performance in boosting liveweight gains.

Ron Kennedy Named

ST. PAUL — Ron Kennedy, vice president of F. H. Peavey & Co., Minneapolis, will head the Minnesota June Dairy Month, an "all-out dairy foods sales thrust and salute to dairymen," along with Mrs. Orville L. Freeman, wife of the state's governor.



Automation and egg quality

Hand candling, even at the rate of 2,100 eggs an hour, is a major expense and serious bottleneck to the egg handler. Moreover, as borne out by recent tests[1], candling inaccuracies are an important source of variation in the eggs purchased by the consumer.

In their study Clayton and Cray not only found considerable variation among candlers grading an identical sample, but individual candlers were not consistent. The same egg a candler graded "B" yesterday, he is likely to grade as "A" or "C" today.

While at present there are devices that weigh and package eggs at high speed, no electronic brain has yet been developed to grade interior quality quickly and infallibly.

No wonder egg processors are currently thinking in terms of grading the laying flock and its management, rather than the individual egg. This seems to offer a promising way to lower costs and improve grading accuracy.

Certain egg quality factors, such as shell shape, shell strength, and the height of the firm albumen, have a relatively high degree of heritability[2]. By selecting a particular strain of layers of similar age, and maintaining them under good management, it is possible to get a uniform product at less cost than if one depends upon candling eggs from a variety of strains with unknown management practices.

Flock knowledge or control, plus a fast method of detecting blood spots, checks, and cracks, seems to offer the most practical and promising approach for the egg processor and the consumer.

If you are interested in locating a supply of eggs of consistently high quality, the Kimber associate in your area can be very helpful. Your inquiry is invited.

[1]Clayton and Cray "Variation in Grading Eggs" Research Circular 57, Sept. 1958, Ohio Agricultural Experiment Station, Wooster, Ohio.
[2]K-137 Kimberchiks consistently top other leading strains for firm albumen measured in Haugh Units.

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"Strategically located mills and Ful-O-Pep broiler research are helping dealers and growers reduce costs in a highly competitive business,"

says **W. B. CARDEN,** *Manager of Southeastern Feed Division of The Quaker Oats Company, in this report to Ful-O-Pep Dealers*

W. B. CARDEN started 17 years ago as a District Representative for The Quaker Oats Company. From 1945 to 1955, he was manager of a poultry processing plant and a Ful-O-Pep District Manager. In 1956, he was promoted to Manager of Ful-O-Pep's Southeastern Feed Division. He is also a director of the Tennessee Feed Manufacturers Association.

"The biggest thing that has happened to the feed business in the Southeast has been the tremendous growth of the broiler industry. Quaker has moved rapidly to help Ful-O-Pep Dealers and growers cash in on this opportunity.

"Continuous research at Decatur, Alabama, has steadily increased the efficiency of Ful-O-Pep Broiler Feeds. This is constantly leading to lower costs necessary for a profitable operation today.

"The quality of broiler meat produced has also been improved by balanced nutrition and careful, sound management. Business-minded broiler men hail Quaker's contribution to the broiler industry.

"In order to provide fresher feeds, bulk feeds and faster service to dealers and broiler growers, Quaker has installed another new mill at Asheville, North Carolina. This is in addition to Southeastern mills at Tampa, Florida . . . Chattanooga, Tennessee . . . Jasper, Alabama and Memphis, Tennessee. Dealers and growers both benefit from Quaker's forward thinking and capital outlay.

"Ful-O-Pep, through trained District Representatives, is also providing sound counselling to dealers on credit, bulk installations and other important management problems.

"Why don't you talk to your local Ful-O-Pep Man? Perhaps he can help you too, to increase the efficiency of your feed operation."

W. B. Carden

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You can offer your broiler growers this effective, economy program

Of course, no feed manufacturer can afford to think of cost *alone* when choosing a coccidiostat for broiler feeds.

The coccidiostat must meet other important requirements: It must help prevent coccidiosis outbreaks; it must permit natural development of immunity; it must have a wide margin of safety.

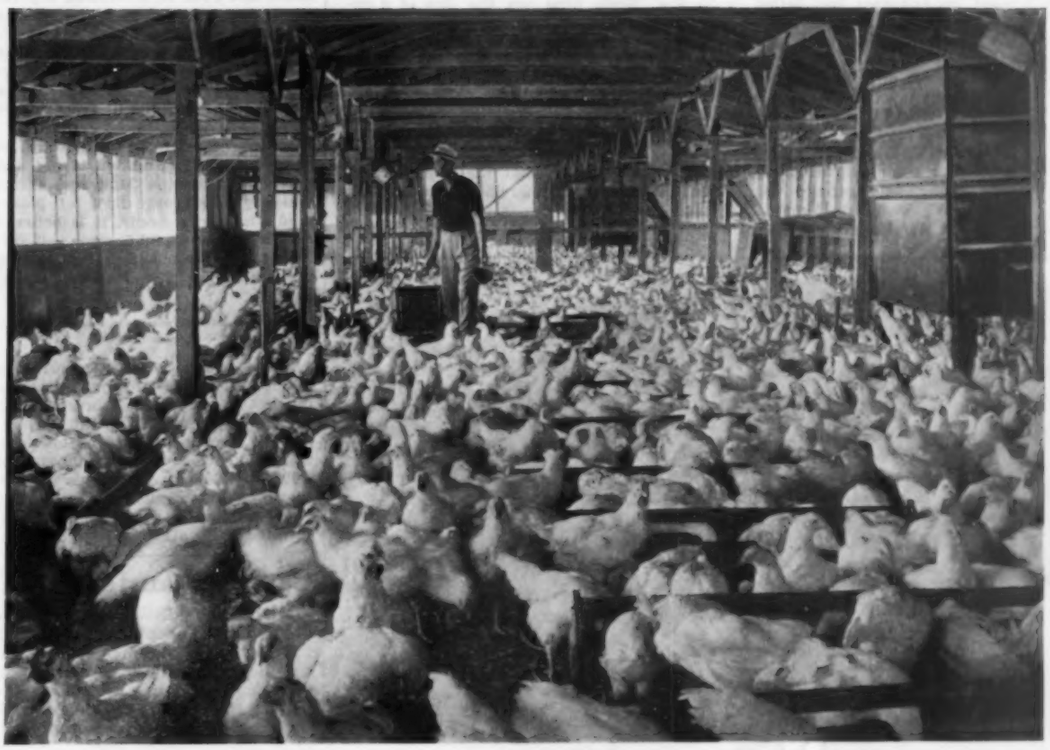
Today, you find *all three* of these requirements effectively combined in *one* coccidiostat; ARZENE®.

And now what about cost? ARZENE *comes to you at the lowest cost for a coccidiostat ever known in the feed industry.*

This means that you can present a genuinely low-cost coccidiosis protection program to your growers. The advertisement on the opposite page, now appearing in broiler publications, helps you sell your economy program.

American Cyanamid Company, Agricultural Division, New York 20, New York.

®ARZENE is American Cyanamid Company's trademark for arsenosobenzene.



Get both coccidiosis protection and natural immunity

Spend $6.20 less to produce a thousand broilers

You know how narrow the gap is between outgo and income in broiler raising. It is so narrow that a saving of $6.20 per thousand broilers becomes mighty significant!

You can make that saving – and get effective coccidiosis control–by asking your feed manufacturer or feed dealer for good broiler feeds containing ARZENE*.

Here are some facts about ARZENE it will pay you to study:

ARZENE costs less per pound of meat produced. You can feed ARZENE to 1,000 broilers from hatching to market at *less than half the cost* of the average coccidiostat. ARZENE costs you less than ½¢ per broiler raised.

ARZENE is effective *under field conditions* as an aid in preventing outbreaks of coccidiosis due to infection with *E. tenella, E. necatrix, E. acervulina* and *E. maxima.*

ARZENE permits the natural development of immunity to coccidiosis. ARZENE's mild yet strong action does not completely *kill* coccidial oocysts. It checks the multiplication of oocysts thus allowing chickens to have the mild infection so necessary to development of immunity.

ARZENE helps prevent mortality losses, weight losses and lowered feed efficiency as a result of infection with the four species of coccidia named above.

Start your economy program now with good feeds containing ARZENE. Ask your feed manufacturer or feed dealer to supply you! American Cyanamid Company, Agricultural Division, N.Y. 20, N.Y.

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Continued Expansion In Egg Production Sought in Arkansas

LITTLE ROCK, ARK. — Cooperative egg marketing which will assure continued expansion of commercial egg production in Arkansas was urged by the Arkansas Poultry Federation in a recent issue of its newsletter.

"Where the commercial egg industry goes from here depends entirely on how closely the interests promoting commercial egg production can work together as a marketing team," the newsletter said. "Arkansas is right in the middle of making a turn, and whether we can make the turn or not is going to spell the success or failure of continued expansion."

The report said that for existing market outlets "it is quite possible" that Arkansas could have as many commercial egg-producing hens as are needed. For continued expansion, however, the newsletter calls for sufficient production to warrant the establishment of an egg breaking operation in the state.

"All of the forecasts on egg prices are pessimistic," the newsletter said. "Of course, it's natural at this time of the year to find a surplus of eggs. It is also the season of the year when the breakers become quite active. But that brings up a point that commercial egg producers and promoters of production programs apparently do not yet understand.

"Expanded commercial egg production characterized by the development in Arkansas has failed in so many cases to fully understand why a well-planned marketing program is absolutely essential. It is true that the producer or feed dealer who has a program involving anywhere from 5,000 to 25,000 layers, and even up to 250,000, may not have any difficulty finding ready markets for top-quality eggs nine months out of the year. Too many people have been sold on the idea that 45 and 50¢ eggs are what should be expected. A well-rounded program takes into consideration a great many more things.

"During the flush season when eggs are extremely plentiful and during the off season when we have quite a number of undergrades, checks and leakers, there is a market to the breakers in liquid and frozen eggs provided sufficient volume is available to justify such a plant operation. Arkansas is right in the middle of making a turn, and whether we can make the turn or not is going to spell the success or failure of continued expansion.

"Some time ago, the idea of a cooperative marketing arrangement was recommended to commercial egg interests. So many people misunderstand the word, 'cooperative,' so perhaps it would be best to explain that no particular reference is made to the farmer type cooperatives with which we are familiar generally. It simply means that the promoters of individual commercial egg production programs that may involve anywhere from 5,000 to 100,000 hens channel sufficient production into a marketing outlet of sufficient size to warrant the interest of the establishment of a breaking operation. If you can visualize the requirement of a breaking operation which is a minimum of 4,000 to 5,000 cases of eggs weekly, then you'll know what is needed to get a major breaking operation interested in locating in the state."

MARYLAND WANTS MORE EGG PRODUCTION

COLLEGE PARK, MD. — Three University of Maryland College of Agriculture faculty members have been appointed to serve on a new 10-member state committee to study the possibilities of increasing egg production in Maryland.

They are: Dr. C. S. Shaffner, head, poultry department; William G. Langston, agricultural economics department, and Prof. R. C. Hawes, department of markets. Mr. Langston was appointed secretary.

Objectives of the committee are the possibilities of establishing a Maryland "fancy grade" for eggs and a survey of competition from other states.

It was reported that there are, at present, only 2½ million layers and potential layers on Maryland farms which produce only 30% of Maryland's table egg needs. It is believed that Maryland could become self sufficient in egg production, thus adding substantially to farm income, officials said.

Cargill Transfers Told

MINNEAPOLIS—Transfer of five grain division employees of Cargill, Inc., Minneapolis—three in the Pacific northwest and one each in Illinois and Louisiana—was announced here by H. Robert Diercks, vice president of the national agricultural handling and processing firm.

The changes include:

Richard Longeway, Baton Rouge, La., grain merchant, to Portland, Ore., in a similar position;

Flint Harding, Jr., Peoria, Ill., grain merchant, named to replace Longeway in Baton Rouge;

Miller V. Bryant, manager of the Boise, Idaho, branch office, named to replace Harding in Peoria;

Donald S. Laird, manager of the Arlington, Ore., elevator, named to replace Bryant in Boise, and

Carroll R. Wilkins, assistant manager at The Dalles, Ore., elevator, named to replace Laird in Arlington.

Gets New Position

TOLEDO, OHIO — Owens-Illinois multiwall bag division has named Frank Cannon eastern regional sales manager, succeeding George S. Harvey, Sr. Mr. Harvey has requested that his duties be restricted to the New England area. Mr. Harvey has had 33 years of experience in the multiwall bag business. Mr. Cannon, with 10 years of experience in selling multiwall bags, was Philadelphia sales representative for the division at the time of his appointment.

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Old-time pressing equipment is not geared to handle the extraction of vegetable oil-bearing materials under today's market conditions. It takes high powered, semi-automatic machinery to produce the high grade oil and cake demanded today. As leading oil millers know, there is only one machine that fulfills these requirements . . . the Anderson Expeller. Modernize your oil mill. Replace obsolete pressing equipment with efficient, modern Anderson Expellers.

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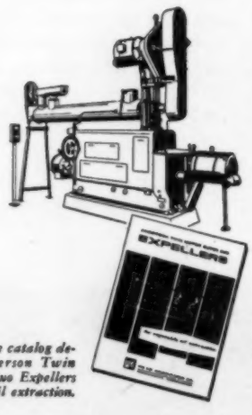

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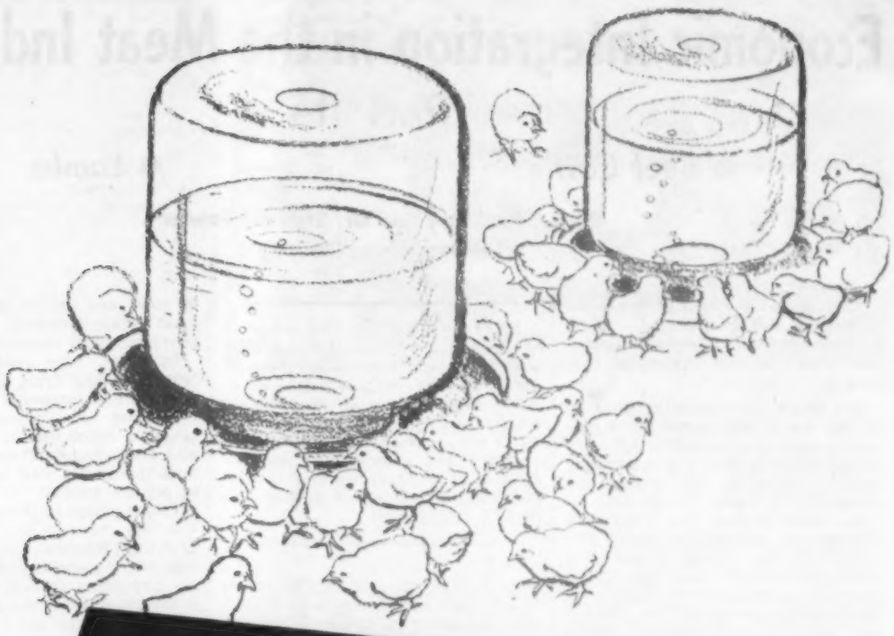

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VACCINATE with CocciVac 3-4 days after chicks are housed and you provide them with early and lasting immunity to coccidiosis. Early immunity is important for layers because it protects them during later growing periods and the laying cycle. Early immunity is also desirable for broilers in helping achieve weight gains and better feed conversion.

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CocciVac provides immunity against the commercially important species of coccidia at savings up to $7.50 per 1000 birds over use of a coccidiostat alone.

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Economic Integration in the Meat Industry

Part II

• Beef Cattle • Lambs

By Dr. Paul Roy and Dr. Stewart Fowler
Louisiana State University

As discussed in Part I of this series of articles, (c) beef and (d) lamb represent the other two more important meats in the consumers' food basket.

(C) BEEF. The marketing changes in beef are taking sharpe when consumers express a preference for leaner and tenderer beef, not necessarily high in grade by U.S. grades and standards. A report by Branson of Texas A&M showed that a majority of consumers in Houston, Texas, preferred U.S. Good grade of beef even when U.S. Choice and U.S. Prime grades were offered at the same price per pound in the retail store[1]. The report goes on to say that U.S. Prime beef was the least wanted of all meat grades even when priced the same per pound as lower grades of beef. Fat beef is not commanding the premiums or the sales it once did. On the other hand, bright red color and leanness of meat are.

It is apparent, too, that retail beef meat sales are being affected by a lack of stable beef meat supplies in the quantity and quality desired by larger chain organizations. For example, younger but over-fed and over-fat animals may come to market while sometime later older, grass-fed and tough carcasses and cuts may occupy the meat counter. Thus, some chains have their own beef feeding and finishing operations so that they can control at least part of their consumer demand and thus stabilize their market irrespective of total beef supplies.

The above cited development happens because the slaughterer-packer is over-capacitated, especially if located around those terminal markets where volume is shrinking. Their costs are high and going higher, yet no beef supplies are guaranteed regularly. Risks and high costs due to uncertainty cause a higher-than-normal marketing margin, raising retail prices of beef meat cuts, and thus affecting beef consumption adversely.

[1]Branson, Robert, The Consumer Market for Beef, Texas Agricultural Experiment Station Bul. No. 856, April, 1957.

EDITOR'S NOTE: This article is the second of a series of two dealing with economic integration in the meat industry. The first article — Feedstuffs, May 9, page 18—covered the broiler and pork industries. The articles are based on research data, experience and observations accumulated by the authors, working in agricultural economics and animal husbandry, respectively.

"Convenience" Beef Products

Increasing food conveniences in beef, such as frozen consumer-type packages, may add another dimension to meat demand which beef producers and others should watch. It is apparent also that national meat packers seek to develop their competitive edge in fabricated cuts instead of fresh meats. It was recently reported by Williams that the ten largest firms in the industry are shifting gradually to hogs and to production of smoked, cured and prepared meat products. In addition, it appears reasonable to assume that a markedly larger percentage of the cattle slaughtered by the 10 leading firms in 1954, as compared with 1947 and earlier, consisted of cows and grades or qualities of meat which ordinarily do not enter into fresh meat channels.

In short, the current tendency among leading firms in the industry is toward an increased degree of specialization or emphasis upon meat products which usually are processed and prepackaged. These commodities lend themselves well to effective use of private brands[2].

Coming back to the question of the U.S. Prime grade. Consumers in Houston preferring this grade of beef numbered about one-third or less of all consumers studied. Thus, such a group does not apparently constitute a "mass market" for Prime beef. Retail chain food stores recognize this and instead gear their operations to the "mass market" which is U.S. Good or thereabouts. Certainly, Prime should be handled in retail meat counters, but it will not pay the store overhead, counter sales and other meat department costs.

Other Sales Opportunities

Other sales opportunities that retailers have noted consist of processed meats such as meat in baby foods, and also meat products for older folks plus convenience foods for the busy housewives. Retailers have noted that consumer preferences include meat with a bright color, little fat and marbling in lean.

Another problem to the retailer is the "cuttability" of a carcass which has a real monetary significance. Studies made by the Livestock Division of USDA show variations in carcasses within the Choice grade, which result in yield of the preferred retail cuts (trimmed cuts from the full loin, rib, square cut chuck and round) of as much as 9%. Translated into monetary terms, this means a difference in carcass cut-out of approximately 10¢ lb. at current retail price levels. When applied to a 600-lb. carcass, this amounts to $60. Of course, this is an extreme example.

However, differences in yield between the high and low yielding groups within a grade average approximately 5%. "Meat type" cattle may be the answer to increased emphasis on cuttability. This type of beef animal, with the desirable combination of thick muscling with high quality meat and very little excess fat, does in fact exist[3].

Since most marketing outlets will demand more grain-fed and finished beef, the smaller cattle producer will find it difficult to fit into this pattern. However, production of feeders will increase, and specialization thereof will gain most rapidly. Also, grain specialization will increase.

Therefore, economic integration will result because someone will have to coordinate these advanced specializations and blend them together into a unified beef program. It will not be so much the advantage of grain feeding over pasture as it will be the shorter time period involved in finishing these animals. Rapid turn-over of stock and of grain will be important, especially as price variations become flattened-out due to more year-round calving programs. A twin to this trend will be one toward marketing cattle on a carcass grade and yield basis where, under economic integration, such findings can be transmitted and put into effect more quickly and efficiently on a local, not national basis.

In the future, the cattle grower may have more alternatives in handling his animals, rather than fewer. For example, custom feeding operations in the South and elsewhere will allow feeder animals to be finished based on "pounds of gain added." The grower can compare this alternative with the one where he finishes the feeder animals himself, or uses a cooperative feeder lot owned jointly by several cattlemen.

Also, the beef grower supplier will find better opportunities in the years ahead in line with the trends already mentioned. More specialized feeding operations will provide alternatives and more meat fabrication, such as frozen cuts, irradiated meats, pre-cut packages, more standardized cuts, tenderizing processes, specialized meat packing plants dealing in all-beef or all-hog slaughter and more uniformity within a slaughter animal class. Also various beef testing and herd improvement programs will allow further alternatives.

Some consideration might be given at this point to some of the production aspects that may affect the future of the integrated or non-integrated cattle enterprise. (Figure 1.)

Performance Testing

There will be an ever-increasing stress on the importance of rapid and economical gains in cattle to keep beef competitive. "Performance testing" offers a bright future for the production of cattle that make more rapid and efficient gains. Rate and economy of gain are strongly correlated. Thus, by testing to identify rapid gaining bulls, and then making full use of the top gainers on cows that are outstanding in weight-for-age, the progeny will most likely be highly efficient converters of feed into beef, as well as rapid gainers.

At present, most beef cattle performance testing is aimed at rate of gain. Thus, most selection for efficiency of feed utilization is accomplished indirectly by selecting for faster gaining cattle. Since about 60-80% of the difference in feed consumed per unit of liveweight increase in cattle is accounted for by rate of gain, considerable improvement in efficiency can be accomplished by selecting breeding stock from the most rapid-gaining cattle.

However, there remains about 20-40% of the variation in efficiency which cannot be accounted for by rate of gain. This may be due to such factors as differences in the rumen, and hereditary differences in the ability of cattle to digest feed. Thus, it may pay to test breeding stock directly for efficiency, as well as rate of gain in order to produce the most efficient-gaining cattle.

Selecting for Meat Type

Red meat, or muscle development, must be bred into our cattle to keep beef in step with consumer demand. The area of the rib eye muscle is the best single standard of over-all carcass muscling. Approximately 70% of the differences in rib-eye area is due to hereditary factors. Thus, considerable progress can be made toward increasing lean meat development in a herd by collecting rib-eye data on steers marketed. Full breeding use should be made of sires and dams, and near relatives of those individuals cutting the largest rib eyes.

Some changes might be in store for areas and types of beef cattle production. In recent years, there has been an increase in the number of small beef breeding herds on farms in the Corn Belt, upper South, and some northeastern areas.

A marked shift from production of slaughter calves to feeder calves in the Gulf and South Atlantic areas will continue to take place as the average quality of the cattle improves. This should lead to an increased number of cattle being finished for market locally.

In the past, the western range has been looked upon as "the great breed-

[2]Williams, Willard F., "Structural Changes in the Meat Wholesaling Industry," Journal of Farm Economics, Vol. XL, No. 2, May, 1958.

[3]AMS, "What's Ahead for Beef Grading?" Agricultural Marketing, AMS, USDA, Washington, D.C., January, 1959.

FIGURE 1. Some possible integrative arrangements in the beef cattle industry.

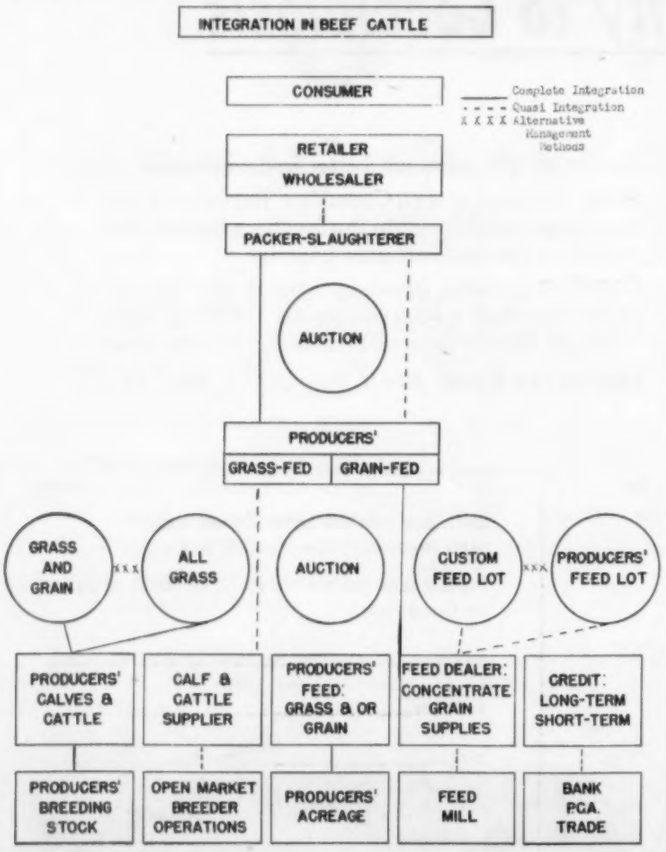
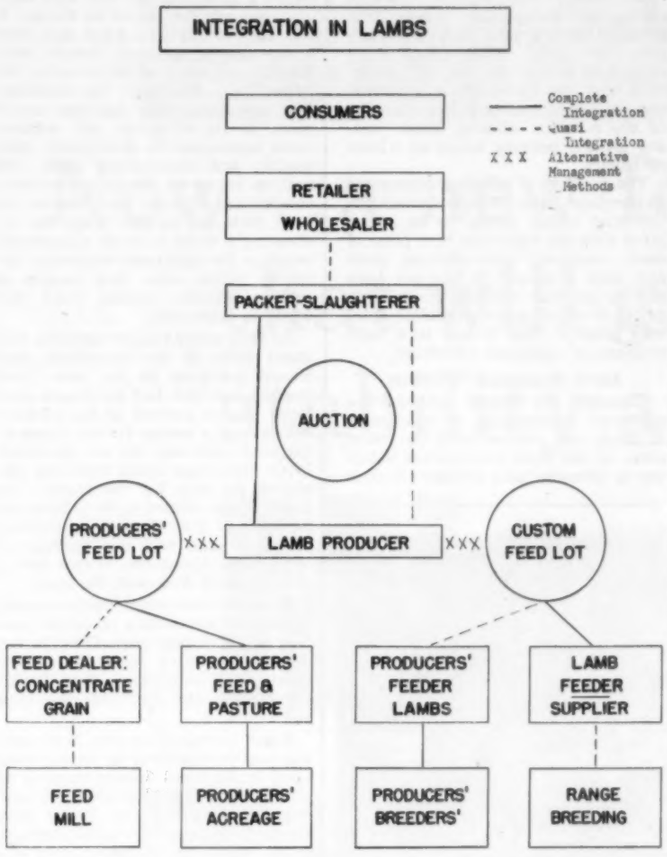


FIGURE 2. Some possible integrative arrangements in the lamb industry.



ing ground," serving as a source of feeder cattle for Corn Belt feedlots, in addition to supplying large quantities of grass-finished beef. Western cattlemen, however, are beginning to keep increasing numbers of their feeder cattle in the West for fattening in local feedlots.

These various production trends may lead to accelerated integration in the nation's beef industry. At present, economic integration in the cattle industry occurs mostly in the large commercial feed lots in the West. Such integration extends forward from the producer, or backward from the packer or chain store.

Some of the large producers have integrated forward by retaining ownership of the cattle while they are custom-fed in commercial feedlots. They follow this route in preference to the more customary one of selling feeder animals.

On the other hand, a packer or chain store may integrate backward —the packer or chain store owns the cattle and has them custom fed to insure a regular supply of quality beef of the type in demand by their trade, as mentioned earlier.

Some packers are quite interested in integration of their beef operations. It is felt that integration through the production stage would even the flow of cattle through the processing stage, thus lowering the cost of processing. Procurement cost would also be cut, and production could be geared to market demand. The packer would be in a stronger position to furnish consumers with the kind, quantity and uniformity of product desired.

Seasonal production, however, complicates such an integrated program. It is difficult to operate, for example, a large feedlot that wants to purchase 500 feeder cattle per week so as to turn out 500 finished slaughter cattle per week. A weekly source of feeders is well nigh impossible under present conditions, where most calves are born in the spring and the bulk of cattle move to market in the fall.

Year-round Production

"Year-round production" could level out seasonal and cyclical peaks in prices. It must be remembered, however, that production in off-seasons may add to cost. Many producers could arrange their production of feedstuffs, however, to have a constant supply the year around. Many farmers in the grain areas follow this practice at present. Grains can be stored with very little loss, and forages can be preserved as hay and silage.

Southern producers have an advantage in a longer pasture season. Through the proper use of permanent and temporary pastures, the harvesting of more hay and the preservation of more silage, and through increased production of corn and small grains, producers may find it profitable to have cattle available 12 months each year.

There is a growing interest in contracting for feeder calves, especially high-quality calves from reputable producers. There appears to be an opportunity here for a feedlot operator to integrate a number of producers. He may contract for their calves, even prior to birth, for delivery at certain specified periods. Such contracting for feeder calves could slow the trend toward expansion of feeder calf auctions in the East and South. On the other hand, continued improvement in the quality and efficiency of these feeder calf sales could have a restraining effect on the more direct integration in the cattle industry.

Market Shifts

Concern has been registered in some quarters as to the possible effects of integration on established markets. No one will deny that good markets are essential to the success of livestock producers, and vertical integration will probably have a profound effect on existing markets. Large-scale, integrated operators will probably deal directly with packers on a grade and yield basis, rather than public terminal markets and livestock auctions. And, animals under contract to chain stores and packers will be diverted from open, competitive markets. This could be detrimental if the competitive markets do have the value-establishing power often attributed to them.

Producers, however, may practice forward integration and consign their stock for sale through a cooperative commission company on a terminal market. Or, they may organize their

DIGESTIVE UPSETS ARE COSTLY!

Prevent Them by Adding

NU-CUD

to YOUR Feed!

Many things can cause digestive upsets in diary cattle but, unfortunately, the feed usually catches the blame. Prevent this with a small amount of NU-CUD added to your feed—only one pound needed for each ton of feed.

NU-CUD gives these important advantages:

1. It prevents most digestive upsets.
2. It assures better digestion through all seasons of the year.
3. It keeps cows "on feed" through stress periods.
4. It provides the necessary rumen bacteria to put cows back on full feed quickly following disease.
5. It assures more complete utilization of feed and permits profitable use of low-grade roughage.

For NU-CUD mixing instructions and prices, write:

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These economy fortifiers are rich in proteins, vegetable fats, and highly nutritious. They also contain essential Vitamin B-G Complex factors, as well as unidentified growth factors. Mixing Nadrisol or Produlac in your formula feeds will promote quicker growth, greater meat and egg yield and will produce feeds your customers want to buy. It's a good way to gain and hold customer acceptance.

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own auction on a cooperative basis. Such means could develop the bargaining ability of the smaller producers.

The cattleman must plan his future in light of many recent and expected technological developments. He must couple consumer demand with newer knowledge in breeding, feeding, meat processing and merchandising.

Foremost, the producer must continually strive to produce a product that meets the consumers' specifications, and to give the consumer the best product possible at a price that allows a fair return for the producer's labor and investment. There is no better way to enhance his bargaining position. Increases in efficiency will result from integration, but the returns may not be shared by producers unless they do some of the integrating.

(D) LAMB: The consumption of lamb and mutton is, of course, far behind that of beef, pork and poultry, but it represents a sizeable portion of the meat industry, nevertheless. Why has use of lamb and mutton not increased significantly? First, consumers are faced with many alternative meats, most of which have been produced traditionally in greater quantity and are more widely known. Secondly, unit costs for lamb and mutton have been traditionally high, thus limiting its market and, thirdly, promotion and consumer education regarding lamb was weak until the Sheep Growers Council organized. In addition, the southeastern areas, among others, have been low per capita consumers of lamb due to race, nationality, ethnic, education, income and environment influences. These prevailing circumstances against lamb and mutton have led to a consumer prejudice against lamb, perhaps totally unjustified.

Limited consumer studies for lamb, similar to those conducted for beef, indicate the preference for "good" and "choice" grade of lamb, but decided opinion against "prime" grade of lamb due to too much fat and too high a retail price. It would appear also that consumers patronizing independent retailers have a more decided preference for "good" while chain store customers prefer the "choice" grade. This may not be so much a preference of consumers as it is preference of the retailers offering these various grades, perhaps based on whims of buyers.

The problem of inducing consumers to purchase lamb through various advertising media seems to be correlated with the relatively high price of lamb compared with chicken, pork and beef. However, it has not been proven yet that drastic cuts in lamb prices at retail would stimulate sales very greatly; thus, it may be a basic problem of consumer education.

Lamb Marketing Problems

Retailers are caught between the apparent indifference of consumers to lamb and mutton, and the vocal pleas of the lamb and mutton industry to promote their product. If pork moves 12 to 1 over lamb and beef moves 7 to 1, and chicken very high also, the retailer cannot be blamed if reluctant to stock his meat case with a slow-moving product (lamb) even though unit margins are probably far better in lambs than for chickens. The answer to this dilemma would seem to be two-fold: (a) Achieve more economies in production, processing and distributing lamb and mutton so as to obtain a favorable competitive climate in relation to beef, pork and poultry while (b) instituting a down-to-earth educational program for consumers regarding nutritive values, ease and variety in cooking, flavor, texture and less waste in lamb cuts.

An Ohio study showed recently that about 85% of the households purchased no lamb in the past three months, and 15% had purchased some lamb. Eighty percent of the consumers gave as a reason for not purchasing lamb that they did not like lamb. Little lamb was found regularly displayed for sale by the stores. The general rule seemed to be to have one package of loin chops, one package of leg-of-lamb and one package of lamb stew. About one to two feet of display space was used for lamb.

In most stores where lamb was sold, it was not placed in a favorable position in the display case. Often it was displayed along with the variety meats such as kidneys, liver, brains, heart, etc., and not with the fresh red meats.

Lamb consumption and lamb pricing may be improved by having some lamb in the meat display cases at all times. Lamb is priced out of the market by many stores. Retail price mark-up on lamb loin chops averaged 160% above the wholesale price of a choice 40-50 lb. wholesale carcass. It seems possible that the stores could increase lamb consumption significantly by lowering the retail mark-up[1].

The packer-slaughterer usually looks toward lamb and mutton as a minor though supplementary type of slaughter which reduces his unit costs and offers a more complete line of meats to offer wholesalers and retailers. Some packers refuse to slaughter lambs at all because no permanent marketing purpose is served, while others do it grudgingly as an accommodation to the meat trade. These feelings could be changed if producers and lamb feeders adopted better management programs in breeding and feeding as well as adopting better marketing procedures to insure steadier supplies, right grade and size of lamb, and at more competitive prices. Details on such a production program are presented somewhat later in the article.

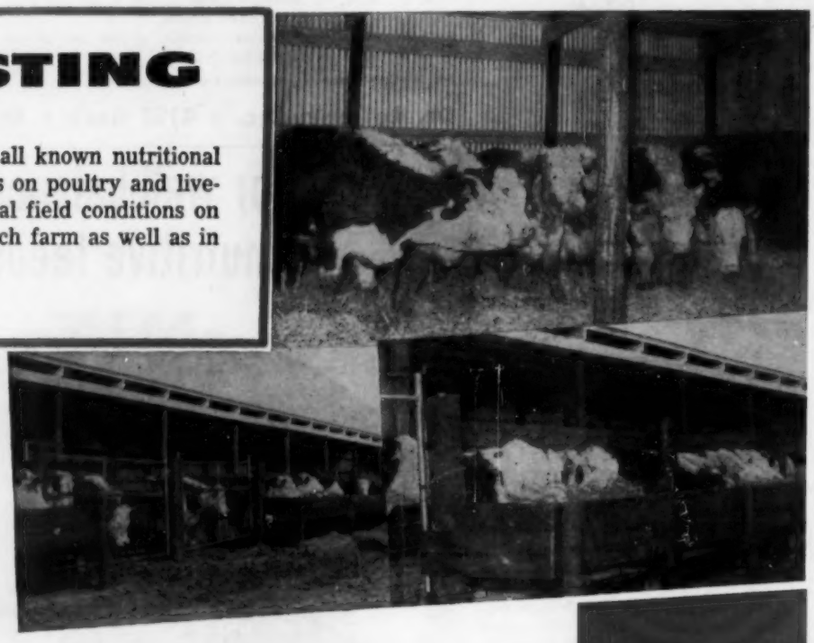
The lamb and mutton producers from a marketing standpoint cannot long ignore the economic obstacles facing this enterprise. Many of the

[1]Henning, G. F., and others, Retail Meat Marketing in Ohio, Ohio Ag. Exp. Sta. Bul. No. 812, July, 1958.

(Turn to INTEGRATION, page 63)

TESTING

combinations of all known nutritional and other factors on poultry and livestock under actual field conditions on 1600 acre research farm as well as in the laboratory.



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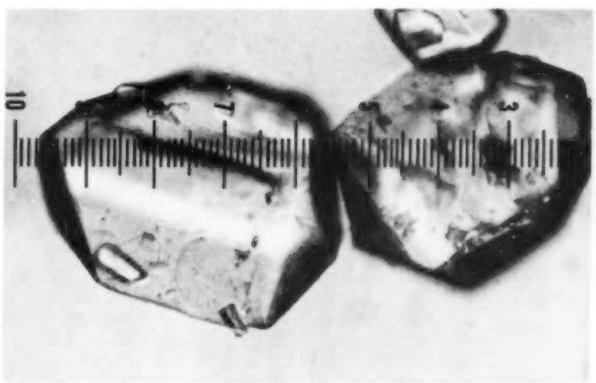
TEAR OUT AND FILE

A SPECIAL REPORT TO FEED MANUFACTURERS, NUTRITIONISTS, AND RESEARCH DIRECTORS

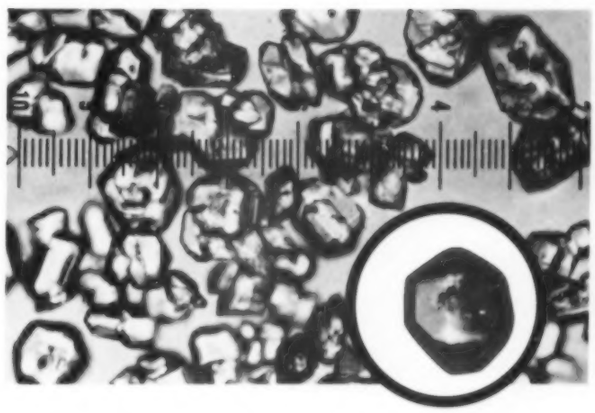
Now...a new form of penicillin that will give you both stability and dispersion

Micro-Pen™

(special coated procaine penicillin G, Lilly)



This is a photomicrograph of the common 200-300 micron size of feed-grade penicillin previously required to provide the stability needed. However, dispersion was poor because of large crystal size.



Lilly's new Micro-Pen is of optimum size (75-100 microns), which gives you more crystals for uniform dispersion. The special coating around each crystal (indicated by the inset above) protects stability.

THE PROBLEM WAS:

Penicillin crystals small enough for proper, uniform dispersion had low stability. Crystals large enough to hold good stability lacked good dispersibility.

NEEDED:

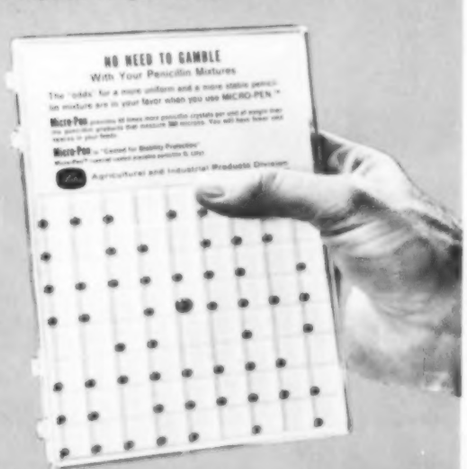
Small crystals for better dispersion that could maintain a high percentage of potency under heat, moisture and pressure.

SOLUTION:

Small, optimum-sized crystals with a special coating that locks in the potency. Lilly's Micro-Pen fulfills these qualifications.

On the next page you will find descriptive research information about this important new product by Lilly . . .

See this Micro-Pen demonstration. Ask your Lilly representative to show you how the basic principle of Micro-Pen gives you much better control over penicillin dispersion in your feeds.



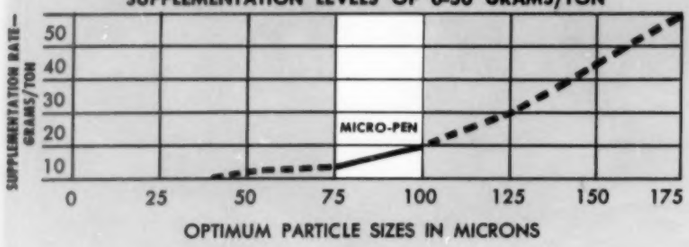
He will be happy also to show you the complete research data from which the information on the following page is taken.

Comparative studies prove Micro-Pen™ combines dispersibility with stability

1. DISPERSION MICRO-PEN HAS THE OPTIMUM PARTICLE SIZE FOR SUPPLEMENTATION

The graph below is taken from a study by Bloom and Livesey.* It illustrates the optimum particle sizes of penicillin needed for supplementation levels of 0-50 grams per ton. As clearly shown on the graph, the 75-100 micron particle size of Micro-Pen falls into the optimum range for a supplementation level of 4-10 grams per ton.

OPTIMUM PARTICLE SIZES OF PENICILLIN FOR SUPPLEMENTATION LEVELS OF 0-50 GRAMS/TON



MICRO-PEN PROVIDES MORE UNIFORM DISPERSION OF PENICILLIN CRYSTALS

This next table illustrates the dispersion of different particle sizes by showing the number of particles found in a unit of feed mixed at a supplementation level of 4 grams per ton. From this study, it was observed that Micro-Pen provided approximately 55 times more particles per unit of feed than the commonly used 300-micron penicillin crystal.

APPROXIMATE NUMBER OF PENICILLIN PARTICLES/GRAM OR POUND IN A SUPPLEMENTATION LEVEL OF 4 GRAMS/TON

AVERAGE SIZE (In Microns)	PARTICLES/GRAM	PARTICLES/POUND
25	90	42,000
50	11	5,160
75	3	1,320
100	1	546
150	0.6	258
250	0.1	42
300	0.05	24

*Bloom, C., and Livesey, E. F. "Particle Sizes for Additives to Animal Feeds." Mfg. Chemist 24:371-375 (Sept. 1953)

2. STABILITY STABILITY STUDIES PROVE MICRO-PEN'S SPECIAL COATING PROTECTS POTENCY

Five brands of penicillin products (including Micro-Pen) were observed microscopically to determine average particle size. After classification by size, these brands were mixed into five batches of a commercial-type broiler ration at the level of one gram of procaine penicillin activity per pound. All five batches were mixed uniformly, as indicated by microbiological assays.

Three samples from each batch of feed were given the Arnoldization test. Each sample was placed in a closed, preheated cabinet and subjected to live steam at a temperature of approximately 100° C. for five minutes. A distinct correlation was seen in all instances, except for Micro-Pen, between the average particle sizes and their ability to retain activity after Arnoldization. Micro-Pen, with an average particle size less than one-half that of the next most stable penicillins, retained a comparatively high percentage of its activity. The results of this test are shown below.

	MICRO-PEN	PENICILLIN A	PENICILLIN B	PENICILLIN C	PENICILLIN D
Average range of particle sizes (in microns)	75-100	30-40	200-300	30-40	200-300
Percent retention of stability after Arnoldization (simulated pelleting)	85	61	79	58	76

ACTUAL PELLETING TEST CONFIRMS STABILITY OF NEW LILLY MICRO-PEN

A 500-pound batch of the basal broiler ration containing Micro-Pen was pelleted. Feed samples were collected in triplicate for penicillin assays. Temperatures were recorded at the following times: (1) before pelleting, (2) immediately after the hot 3/16-inch pellets came from the pelleting chamber, and (3) at the time the cooled pellets were bagged in regular multiwalled-paper feed bags. The actual data is shown below:

PELLETING DATA FOR MICRO-PEN

Penicillin activity/pound of mash	1.073 Gm.
Maximum temperature of steamed mash	122.0°F.
Maximum temperature of pellet from pellet chamber	141.8°F.
Temperature of cooled pellets when sampled	73.4°F.
Activity retained in cooled pellets	93.8%

3. CONCLUSIONS THE PRINCIPLE OF MICRO-PEN IS SIMPLE IN ITS LOGIC:

(1) The optimum particle size of the crystal greatly improves the dispersion pattern of the penicillin.

(2) The special coating protects the potency of the crystal.

(3) The end result is feed that more consistently delivers the proper amount of growth-giving, health-protecting penicillin to the animal.

Further improve your feeds with this new type of procaine penicillin G . . . stable . . . dispersible . . . MICRO-PEN™

Lilly

Eli Lilly and Company
Agricultural and Industrial Products Division
Indianapolis 6, Indiana

TEAR OUT AND FILE →

ALFALFA RESEARCH COUNCIL—Members of the Alfalfa Research Council are pictured here. The American Dehydrators Assn.'s research grants are made under the direction and upon recommendation of the council. Seated, left to right: Dr. H. O. Graumann, USDA; H. C. Schaefer, Ralston Purina Co.: Dr. H. R. Bird, University of Wisconsin; Roy C. Elrod, Archer-Daniels-Midland Co.; Dr. W. M. Beeson, Purdue University. Standing: Dr. Francis H. Bird, Eastern States Farmers Exchange; Dr. U. S. Garrigus, University of Illinois; Dr. L. E. Hanson, University of Minnesota; Dr. C. Ray Thompson, USDA; Harry Konen, Harry J. Konen Co., and Dr. H. Ernest Bechtel, General Mills Inc.

ADA Announces Research Grants

KANSAS CITY—Research grants-in-aid, in the amount of $13,500, have been approved by the board of directors of the American Dehydrators Assn., according to a recent announcement by president Ralph F. Beermann, Beermann Bros. Dehy, Dakota City, Neb. Grants will be made to the University of California, University of Florida, Michigan State University, South Dakota State College, and Wisconsin Alumni Research Foundation.

At Michigan State University workers are on the second year of four year study of "The Nutritive Value of Artificially Dehydrated Alfalfa Pellets for Dairy Cattle." The work at Michigan State is under the direction of Dr. C. F. Huffman and Dr. C. A. Lassiter.

This is the fifth consecutive grant to be made to the University of California, and the amount granted this year will assist in the study of "The Method of Feeding Dehydrated Alfalfa Pellets as a Supplement for Range Sheep." Dr. J. H. Meyer of the Animal Husbandry Department at Davis will be the project leader.

Dr. T. J. Cunha at the University of Florida is setting up a study of "The Effect of Protein Level and Dehydrated Alfalfa Pellets on Reproductive Performance of Young, Lactating Beef Heifers on Grass Hay Wintering Rations." This is the first year ADA has contributed a grant-in-aid to this station.

"The Value of Dehydrated Alfalfa in Gestation and Lactation Rations of Female Breeding Swine Kept Continuously in Dry Lot on Concrete" is a new project to be started at South Dakota State College under the leadership of Dr. R. C. Wahlstrom.

Under consideration is a study of the availability of vitamin E in dehydrated alfalfa with adequate selenium in poultry rations. Preliminary work is now underway at the Wisconsin Alumni Research Foundation.

Research grants by the ADA are made under the direction and upon recommendation of a 15-man research council. Dr. H. R. Bird, University of Wisconsin, is chairman of the council, and H. C. Schaefer, Ralston Purina Co., is permanent secretary. Retiring members of the 1958 council are Dr. Hugo O. Graumann, U.S. Department of Agriculture; Harry J. Konen, Harry J. Konen Co., and Dr. H. S. Wilgus, the Ray Ewing Co. New members of the council have not been announced.

Research Grant

NEW YORK—American Cyanamid Co., New York, has renewed a grant to Iowa State College for continuing studies on the effect of feeding Aureomycin chlortetracycline to dairy cattle.

Cyanamid has been supporting the seven-year studies at Iowa State on a continuing basis. Dr. N. L. Jacobson, dairy husbandry department, is conducting the work. He plans to include in this year's studies the effect of Aureomycin on the absorption and utilization of calcium in dairy animals. He also will study the influence of the antibiotic on calves fed restricted rations for veal production. This year's grant has been renewed to conclude Dr. Jacobson's work.

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Babcock Bessies are not "feed-wasters." They convert feed into eggs very efficiently, and they lay a lot of high quality eggs.

This low feed cost per dozen eggs gives your customer a good return on his feed investment . . . encourages him to enlarge his flock and increase his feed orders. Do you know of a better way to increase feed business than through satisfied customers?

Real Business Hens

If you participate in a financing or integrated program, you'll find Bessies are real business hens. They lay a high percentage of marketable eggs . . . and Bessie eggs are grading over 95% AA's and A's at grading stations.

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Have you seen our colorful new catalog? Write, and we will send you copies for your customers.

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Vitamin A as a Factor Affecting Fertility in Cockerels

● J. R. Paredes and T. P. Garcia, Patronato Biologia Animal, Madrid, Spain; Poultry Science, Vol. 38, No. 1, January, 1959, pp. 3-7.

ABSTRACT AND COMMENT

This is a report of a very small, rather poorly controlled experiment (only 10 White Leghorn cockerels on experimental diet, and 5 on the control ration) which endeavored to determine the effects of supplementing a basal diet of 32.5% white corn, 20% barley and 10% oats; 20% wheat bran, 5% cottonseed meal, 4% meat meal, 5% fish meal, 2% bone meal, 1% oyster shell, and 0.5% common salt plus added Vitamins D_3, riboflavin, calcium pantothenate, pyridoxine and added manganese sulphate and potassium iodide.

The basal diet was analyzed for vitamin A and was reported as containing 3628.7 I.U. per pound—a surprisingly high level considering the ration composition and therefore subject to question. The control cockerels were supplemented with 4535 I.U. of stabilized vitamin A palmitate per pound of ration starting at 10 months of age and continued for a period of 10 weeks. During the final phase of the experiment—the 11th and 12th weeks—both groups received an additional supplement of 13,605 I.U. per pound of ration.

The volume of the ejaculates showed no appreciable variation, but the cockerels on the experimental low vitamin A ration showed a rather large increase (15%) in numbers of abnormal forms during the final weeks of the experiment as well as a tendency to produce a grayish-white watery semen with poor sperm motility and low sperm counts.

To test fertility, the semen was evaluated objectively on the assumption that although normal semen does not necessarily imply high fertility, semen of low or poor quality is doubtless very low in fertility. These changes were promptly corrected when the low-vitamin A diet cockerels were supplemented during the final two weeks of the trial. Although the experimental results are possibly subject to design criticism, the data are interesting since they demonstrate that male birds which appear to be normal, may actually be quite low in semen quality and probably very low in fertility—a condition which may occur in the field, according to certain poultry authorities.

The trial also appears to substantiate the opinion of many nutritionists that although a feedstuff may analyze adequate in vitamin A (value), actual results may be quite poor unless some form of stabilized vitamin is also included in the diet.

It has been somewhat surprising and disconcerting to still see some feed manufacturers relying on natural feed ingredients, particularly alfalfa meal, for a large share of the vitamin A value in poultry rations. This is particularly surprising in view of the published results regarding the destruction of this vitamin in storage, the oftentimes rather poor conversion of carotene to the active vitamin and the shaving of nutritive levels of the vitamin to almost the bare minimum even though plant products furnish the chief amount in the diet. It's dangerous living at the best!

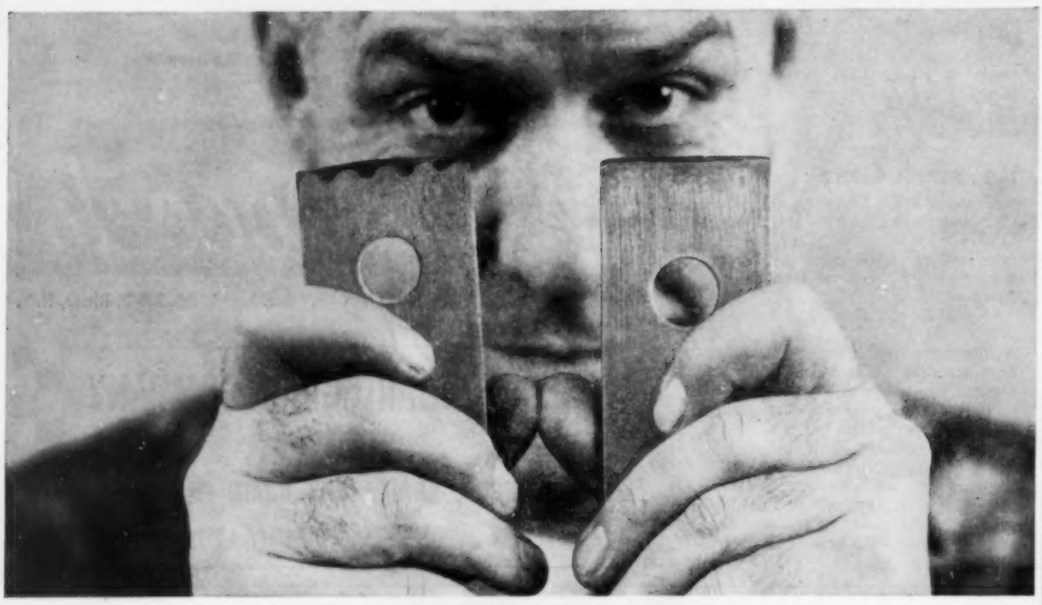
In times of stress—and disease—when requirements of A are particularly high, this thinking becomes folly and may go a long way to explain poor results in certain cases and also the reason why so-called shotgun treatments of vitamins give better responses than normally expected.

Incorporation Asked

LITTLE ROCK, ARK.—O. K. Processors, Inc., Ft. Smith, Ark., has filed articles of incorporation with the Arkansas secretary of state, asking that its name be changed to WestArk Poultry Processing Corp. The firm listed 150,000 shares of $1 par value stock and said it was operating with a total of $300 paid in capital.

Incorporators are Collier Wenderoth, W. Kenneth Pierce and Ed Sharum, all of Ft. Smith. Edgar E. Bethell, Ft. Smith, was named agent for the corporation, which said it would engage in the poultry processing and egg business.

PACAL



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Note the Serrated Edge Design* on the PACAL Hammer at left in the picture above. Gives you more tungsten-carbide on the working surface of every hammer —50% more than on conventional hard-faced hammers. New PACAL Hammers sharpen as they wear, hold their edge, cut cleaner. Resists spalling or breaking away when subjected to shock and abrasion. Last 25% longer than the ordinary hard-faced hammers.

There's a PACAL Hammer for your product and your hammermill. Call or write the Hammer Division.

*PATENT APPLIED FOR

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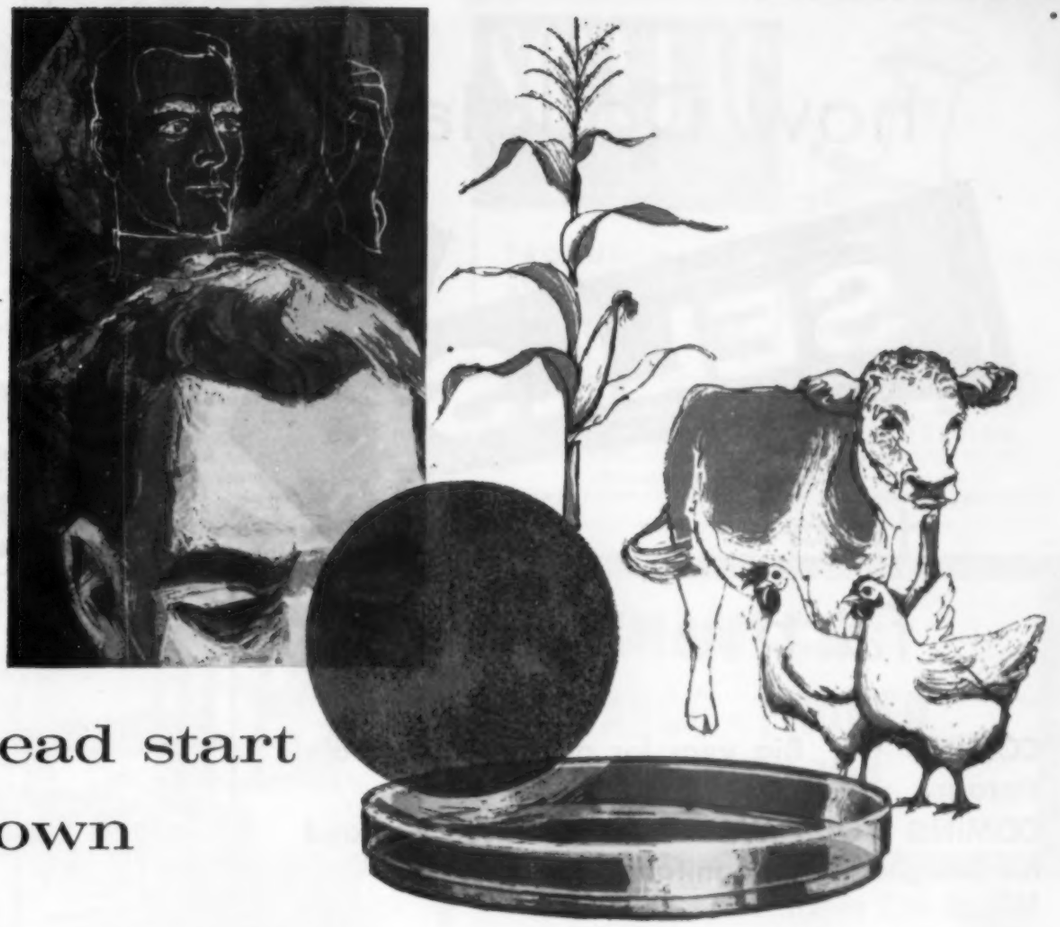

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how Douglas SELLS the farmer for you

COMING UP: Big year for on-the-farm grain storage

COMING YOUR WAY: An increased demand for Douglas Grain Sanitation Products

Which will mean . . .

More profits for you—cleaner grain for your elevator

Modern and progressive, Douglas Chemical Company makes opportunities instead of waiting for them. This year Douglas is hitting the farm market with a dynamic sales package that will enable you to increase profits through sales to farmers.

MERCHANDISING AT THE POINT OF PURCHASE

Attractive display material is aimed to sell the customer at the point of purchase—your place of business. A new Douglas display rack—designed to do your selling for you—is offered FREE to dealers with the purchase of selected items. And new farm customers for you will be pre-sold by hard selling ads in leading state farm papers, compelling farm radio commercials and timely direct mail promotions.

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With 43 years of professional grain sanitation experience Douglas offers top quality in the complete sanitation line at competitive prices.

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Mail this coupon for the complete Douglas story.

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Tests Conducted on Antibiotics for Layers

STATE COLLEGE, MISS. — High levels of antibiotics are needed for layers only in periods of "stress," according to Dr. Charles H. Thomas and Dr. Elbert J. Day, department of animal husbandry at Mississippi State University, and L. B. Walton, superintendent of the Black Belt branch experiment station.

Reporting on an experiment at the Black Belt station, they said:

"A lower response was obtained from the intermittent supplementation of cage layer rations with antibiotics four days per month than had been obtained in preliminary tests. However, when the costs of feed, antibiotics and replacements, and the return for eggs and cull hens were considered, use of antibiotics did not result in economic loss. During the winter and early spring the antibiotics definitely resulted in a profitable return," the researchers reported.

"Commercial cage layer operators probably should limit the use of high levels of antibiotics, even on an intermittent basis, to the cold weather months and during other stress periods, such as extremely high environmental temperatures and diseases."

The scientists said they are doing further work to compare the effect of 100 gm. of Terramycin to 200 gm. of Terramycin per ton of feed on an intermittent basis (four days per month).

"High levels of antibiotics should not be used in laying rations on continuous basis except in periods of stress. Since it is difficult to know when low level infections are present in laying flocks, or to anticipate certain stress periods, we believe that periodic and continuous feeding of antibiotics should be further investigated to determine the most desirable method and economic level to be used," the researchers suggested.

Automatic Water Medicator Offered

NEW YORK—Through a promotion sponsored by American Cyanamid Co., New York, animal health dealers will offer their large poultry customers an automatic water medicator free with each order of four 25-lb. drums of Aureomycin Soluble Powder, the company announced.

The new automatic medicator is attached directly in the lines of automatic water systems and accurately dispenses the antibiotic into the water system. Called the "Auto-Medic," the antibiotic dispenser retails for $49.50. It can be used with automatic water systems for hogs, sheep and cattle.

Effective May 1 through June 30, the "Auto-Medic" offer is part of the national campaign Cyanamid is conducting to help secure customers for dealers of animal health products.

IRS Rules on Grain Storage Amortization

MINNEAPOLIS—The Minneapolis office of the Internal Revenue Service recently ruled that an elevator is not required to have permanently installed equipment to qualify for amortization if the portable equipment is permanently available for use, but that the portable equipment itself is not subject to rapid amortization and must be depreciated on a normal schedule.

A federal law permitted amortization over a 60-month period, of the cost of grain storage facilities completed between Jan. 1, 1952, and Dec. 31, 1956, provided the facility was permanently equipped to receive, elevate, condition and load out grain.

Last year the IRS in Washington, D.C., issued a clarifying statement which in effect said that the equipment for receiving, elevating, conditioning and loading out must be either permanently installed or permanently available in order for the building to qualify for the rapid amortization.

The Northwest Country Elevator Assn. requested the recent IRS ruling because a member firm which had amortized a flat storage structure over the 60-month period was advised by the Minneapolis office of the IRS that this could not be done unless the equipment was permanently installed.

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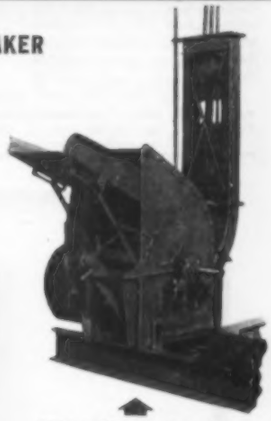

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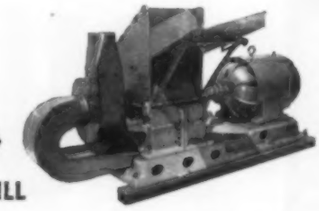

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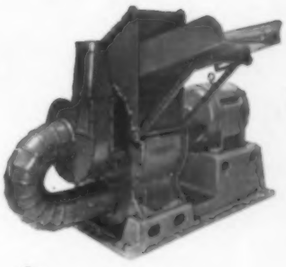

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LINSEED OIL MEAL

Feeding Practices and Research— Past, Present and Future

By G. M. Diser, J. W. Hayward and W. M. Witz
Archer-Daniels-Midland Co.
Minneapolis

Flax is one of the oldest crops known to man. The principal products of the flax plant—flaxseed, flax fiber, linseed oil and linseed oil meal—have been used in various ways since before Biblical times. Remains of flax plants have been found in Stone Age dwellings, and linen was one of the chief materials used for clothing as early as 4,000 years ago.

In spite of competition from other oil-bearing seeds and other highly profitable crops, flax continues to be a crop of considerable economic importance in certain areas of the U.S. which are especially adapted to its culture. In 1958, a total of 39,543,000 bu. of flaxseed were harvested from 3,853,000 acres. The five leading states in flaxseed production for 1958 are shown in Table 1.

The processing of flaxseed into linseed oil and linseed oil meal gradually moved westward as the production of flax moved in that direction.

TABLE 1. Leading States in Flaxseed Production, 1958

State	Acres	Bushels
North Dakota	2,547,000	21,650,000
South Dakota	665,000	8,312,000
Minnesota	518,000	6,993,000
California	45,000	1,642,000
Texas	28,000	336,000

(Ref.: Crop Production—1958 Annual Summary, USDA, AMS, Crop Reporting Board, Cr. Pr. 2-1 (58), pp. 26, 93, Dec. 17, 1958.)

EDITOR'S NOTE: This article, a preview as well as a review of linseed oil meal feeding and research, is based on a presentation made by Mr. Diser, a nutritionist for Archer-Daniels-Midland Co., and Dr. Hayward, director of nutrition for the firm, at a meeting of the Twin Cities Nutrition Seminar in St. Paul earlier this year. The third author, Mr. Witz, is nutritional research director for ADM.

Minneapolis became established as the flaxseed processing center of the U.S., and it continues to hold that position. Table 2 shows the amount of linseed oil meal produced (on the average) in the U.S. in comparison with other protein concentrates during the past 20 years. (Production figures are not included for the years between 1941-1949.)

Morrison ("Feeds and Feeding," 22nd ed., p. 485, 1956) stated that "linseed meal is one of the most popular protein supplements in this country." Because of its popularity, based on the beneficial results from its use in the ration, linseed oil meal is usually a more expensive source of protein than some of the other protein supplements. Since linseed's proven value is recognized to be greater than its protein content, it is not surprising that linseed oil meal continues to be widely used for ruminants (dairy cattle, beef cattle, sheep) and horses and, to a lesser extent, for other species of animals and poultry.

TABLE 2. Production of Certain Protein Concentrates in the U.S. (Thousands of Tons)

Protein concentrate	Average yearly production 1937-41	1949-56	1956-57
Soybean cake and meal	1,305	5,577	7,509
Linseed cake and meal	616	582	576
Cottonseed cake and meal	2,057	2,512	2,289
Peanut cake and meal	67	81	63
Copra cake and meal	76	127	113
Corn gluten feed and meal	731	994	1,010
Tankage and meat scraps	656	979	1,078
Fish cake and meal	194	245	302
Dried milk products	142	166	150
Other milk products*	1,829	1,251	1,100

*Dry equivalent of milk products estimated as fed on farms.
(Ref.: Soybean Blue Book, page 36, 1958.)

Processing Development

Large-scale production of linseed oil in this country was accomplished initially through the use of hydraulic presses. Meal produced in this manner became known as "old process" linseed oil meal. Later the screw-press or expeller method was developed to remove the oil from the flaxseed. Solvent extraction, using a batch-type method, was experimented with about the turn of the century for processing various types of oil-bearing seeds. Because of inefficient oil removal and the production of unsatisfactory linseed oil meal, this process was abandoned in the U.S. about 40 years ago.

Experiments were begun in 1937 by the Archer-Daniels-Midland Co. to adapt continuous solvent extraction equipment to the processing of flax. Plans were made to construct a continuous solvent extraction plant for processing flaxseed but the war delayed the construction. Early in 1949, continuous process solvent extraction of flaxseed, using hexane as a solvent, was started in Minneapolis first by the Minnesota Linseed Oil Co. and then by the Archer-Daniels-Midland Co. In 1951-52, a little more than one half of the flaxseed processed in the U.S. was still being handled through screw presses. According to Peterson ("Processed Plant Protein Foodstuffs," p. 605, 1958) "by 1955, the portion processed by all types of solvent extraction had increased to 80%."

TABLE 3. Approximate Analysis of Linseed Oil Meal

Component	Expeller %	Extracted %
Protein	34.5	36.6
Fat	4.3	1.1
Fiber	8.3	8.5
N.F.E.	36.6	37.4
Ash	5.8	5.9
Calcium	0.4	0.4
Phosphorus	0.9	0.9

(Ref.: Eastern Feed Merchant, October, 1951)

Meal Differences

Analytical data on the two types of meal, expeller processed and solvent extracted (Table 3) shows the primary differences, due to the method of processing, to be in the amount or level of protein and fat in the meal. Both of these meals were made back about 1949 from Upper Midwest flaxseed.

Generally speaking, linseed oil meal is not thought of as containing any of the vitamins to any measurable extent. However, analysis (Table 4) has shown that this protein supplement does contain certain of the B-vitamins in appreciable amounts. The samples of meals analyzed to se-

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TABLE 4. Vitamin Content of Linseed Oil Meal

Vitamins	Mgm. per lb.
Thiamin	1.2- 3.9
Riboflavin	1.8- 1.9
Niacin	18.7- 21.0
Pantothenic acid	6.1- 6.4
Choline	917.0-976.0

(Ref.: Eastern Feed Merchant, October, 1951)

cure this data were processed from flaxseed grown in the Upper Midwest.

The relative merit of any protein supplement is dependent upon the quality of its protein and its ability to compensate for the deficiencies of the protein in the ingredients of the ration with which it is to be fed. Quality of protein is based on the comparative amounts of the essential amino acids present and their availability. Table 5 presents data on the content of four of the essential amino acids in certain of the various ingredients commonly used in livestock and poultry feeds.

While linseed oil meal appears to be somewhat deficient in lysine for use at high levels in rations for poultry and swine, its content of the other essential amino acids listed here suggests that it can serve to supplement the non-lysine deficiencies in corn protein as effectively as the other sources of protein commonly used for this purpose.

Water Absorption

Linseed oil meal possesses the remarkable ability to absorb large amounts of water in proportion to its weight. This high water absorption is closely associated with the beneficial effects resulting from the inclusion of linseed oil meal in rations for livestock. Table 6, taken from Ewing ("Poultry Nutrition," 4th ed. revised, p. 359, 1951), indicates the comparative water-absorbing capacities of linseed oil meal and other meals.

With the advent of continuous solvent extraction as a means of processing flaxseed for the production of oil, considerable controversy arose as to the relative merits of solvent extracted linseed oil meal as compared with meal produced by screw presses (expellers). Numerous feeding trials were made with all classes of livestock in attempting to determine the answer to this question. To our knowledge, no reports have appeared in the literature which have shown any advantage for either type of meal over the other. For example, Pratt and Monroe (Ohio) were unable to demonstrate any definite advantage of either type of meal over the other for milk production and general well-being of dairy cows. At the University of Wisconsin, Allen found both types of meal to be equally palatable for dairy cattle. Investigators at Iowa, Nebraska and other stations, were unable to find any significant differences in feeding value, on the basis of digestibility and efficiency, between the two types of meal.

"Bloom"

There was considerable question as to just what component of linseed oil meal was responsible for its "bloom" or "conditioning factor." This inter-

TABLE 5. Amino Acid Content (%) of Various Feed Ingredients

Ingredient	Protein (%)*	Lysine	Tryptophan	Cystine	Methionine
Corn	9.0	0.3	0.10	0.16	0.18
Soybean oil meal	45.0	3.2	0.58	0.66	0.67
Cottonseed meal	43.0	1.8	0.52	0.86	0.65
Linseed oil meal	35.0	1.2	0.56	0.66	0.60
Peanut meal	44.0	1.4	0.48	0.70	0.44
Corn gluten meal	42.0	0.7	0.21	0.76	0.84
Meat scraps	50.0	3.1	0.35	0.60	0.65
Fish meal	60.0	5.7	0.84	0.90	1.62
Skim milk (dried)	35.0	2.5	0.45	0.42	1.05

*Nitrogen x 6.25. (Ref.: Amino Acid Handbook, pp. 296-297, 1956.)

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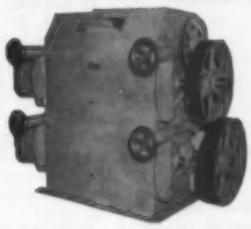

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TABLE 6. Comparative Water Absorbing Capacities of Linseed Oil Meal and Other Meal (Parts Water to One Part Meal)

Meat and bone scraps	1.50
Cottonseed meal	1.75
Soybean oil meal, 41%	3.00
Soybean oil meal, 44%	3.50
Corn oil meal	5.25
Linseed oil meal	6.30-8.10

est prompted the Iowa station to conduct a classical feeding test with yearling steers back in 1938-39. The following supplements were used in conjunction with the regular ration:

Ration A — Hydraulic linseed oil meal.

Ration B — Extracted linseed oil meal.

Ration C — Extracted linseed oil meal plus crude extracted linseed oil.

Ration D — Extracted linseed oil meal plus "vitamin F concentrate" (unsaturated fatty acids from linseed oil).

Ration E — Extracted soybean oil meal plus crude extracted linseed oil.

Eight steers were fed on each ration for a period of 219 days. The results of this trial are presented in Table 7.

It has been generally concluded as a result of this and other cattle feeding tests that the "bloom factor" in linseed is due to its gum or mucilaginous substance, sometimes referred to as "mucin." This means then that, even though linseed oil meal contains a good quality protein for ruminants, its unique virtues are for the most part due to the "mucin" or mucilaginous material contained in the meal.

Flaxseed is unique among the more common grains and seeds in that the outer coating of the seed, or epiderm, is made up of cells which contain mucilage. This mucilage comprises 6 to 7% of the weight of dry flaxseed and about 10% by weight of the meal. This mucilaginous substance is a water-dispersible carbohydrate, made up primarily of aldobionic acids and nonreducing sugars. It differs from the mucin secreted by the mucous membranes in animals in that the molecules of animal mucin are made up of a combination of protein and carbohydrate groups (polysaccharides). On the basis of a limited amount of information available, an opinion has been advanced that flaxseed mucilage is digested to some extent by the microorganisms, principally yeasts and bacteria, in the stomach of ruminants but is nearly indigestible by monogastric animals and poultry.

TABLE 7. Effect of Linseed Oil Meal on the Finish of Yearling Steers

	Ration				
	A	B	C	D	E
Average initial weight, lb.	604	607	601	597	601
Average daily gain, lb.	2.12	2.09	2.09	1.99	1.87
Average daily feed intake, lb.	19.65	19.55	19.78	19.28	18.06
Chicago selling price per cwt.	12.25	12.25	11.75	12.00	11.00
Dressing percentage	62.2	62.7	62.1	61.7	62.6
Carcass grade—					
Prime	0	3	1	0	0
Choice	6	3	3	5	1
Good-to-choice	1	2	3	2	3
Good	1	0	1	1	3

Beneficial Effects

As indicated above, linseed oil meal is capable of absorbing large amounts of water, thus increasing its bulk proportionately. As Peterson points out ("Processed Plant Protein Foodstuffs," p. 611, 1958), "when this bulking takes place in the animal's rumen, feed is retained there longer, thereby giving the rumen bacteria and yeasts more time to soften and digest the nutrients. No other feed has this water-absorbing quality to the same degree as does linseed oil meal. The bulkiness of the linseed oil meal ration, together with the lubricating quality of the linseed mucilage, gives the ration a pronounced beneficial effect on the intestinal tract by protecting the walls from harsh fibrous materials and facilitating the continuous movement of the mixture through the intestine." It is also believed that the mucilaginous component of the linseed oil meal adsorbs the various toxic end-products of digestion and moves them out of the intestinal tract before they have an opportunity to be absorbed into the blood stream. This contributes appreciably to the general well-being of the animal.

Large amounts of linseed oil meal may be fed to ruminants without ill effects, since it is not laxative to the extent of being cathartic but serves to regulate excretion, thus preventing constipation.

Chick Rations

During the years of World War II, when protein supplements were in short supply, attempts were made to utilize linseed oil meal at rather sizeable levels in rations for poultry. Some investigations revealed that linseed oil meal produced poor growth when substituted for other protein supplements in chick starting diets. Thus it was concluded that linseed oil meal contained an apparent "toxic factor" for poultry.

Table 8 presents the results reported by MacGregor and McGinnis (Washington Agric. Expt. Station at Pullman) from their work on substituting linseed oil meal for soybean oil meal in starting rations for chicks.

These data are typical of the results secured by other researchers.

These Washington workers tried

TABLE 8. Effect of Linseed Oil Meal on Growth Rate of Chicks (White Leghorn Chicks, 4-Week Test)

Ration treatment	Crude protein in ration (%)	Average weight (gm.)
30% Soybean oil meal	20.0	278
7.5% Linseed oil meal	22.4	248
15.0% Linseed oil meal	24.8	216
22.5% Linseed oil meal	27.2	176
30.0% Linseed oil meal	29.6	151
35.85% Soybean oil meal	22.4	280
41.70% Soybean oil meal	24.8	277
47.55% Soybean oil meal	27.2	284
53.40% Soybean oil meal	29.6	268

(Ref.: Poultry Science, 27:141-145, 1948)

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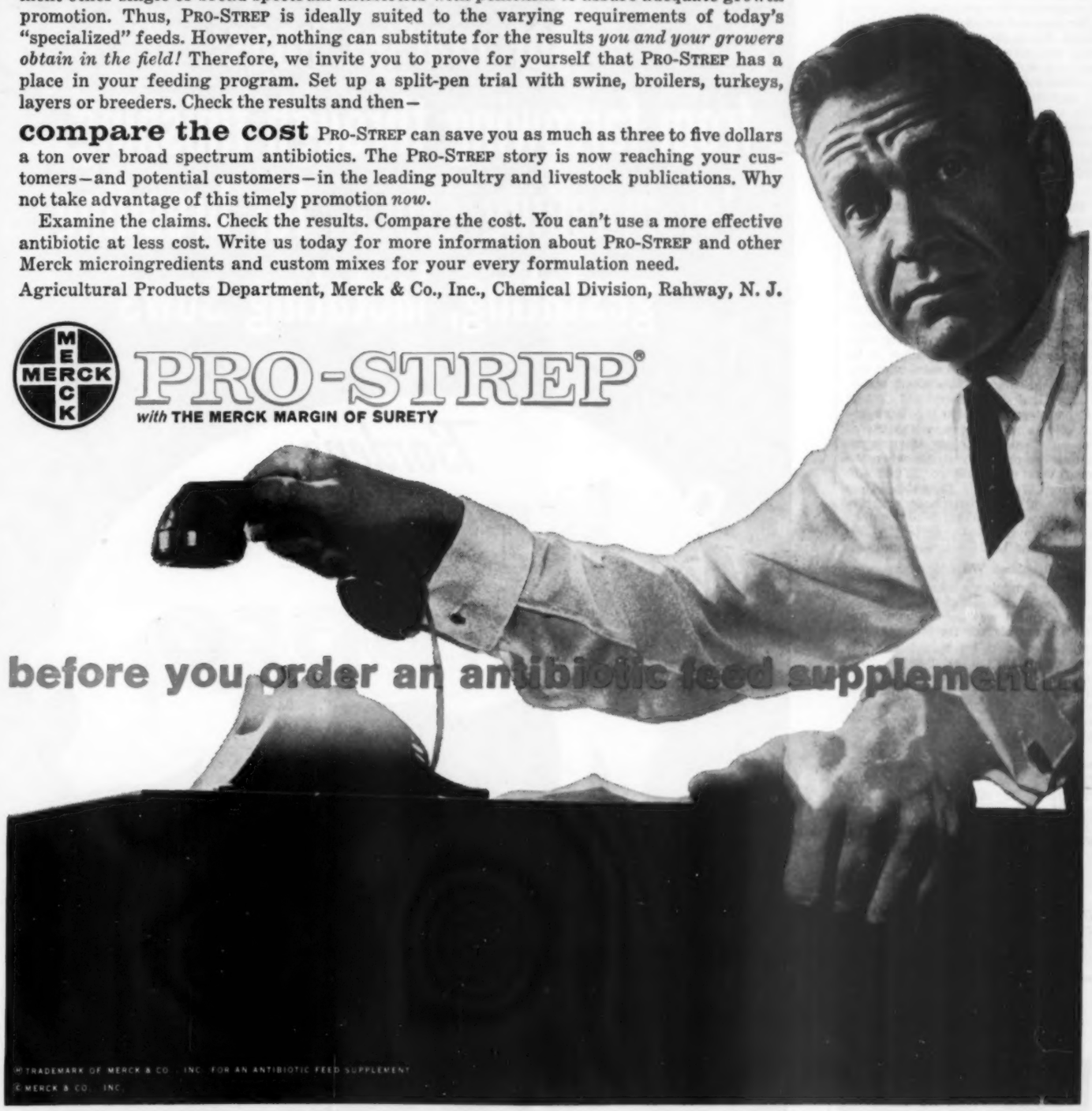

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TABLE 9. Comparison of Linseed Oil Meal and Grits for Use in Poultry Feeds (New Hampshire Chicks, 6-Week Test)

Ration	Av. weight (gm.)	Feed/ gain	Arched beak	Beak necrosis
Control	589.4	2.41	0	0
Control + 10% linseed oil meal	517.0	2.52	14	2
Control + 10% linseed grits	540.0	2.54	0	0
Control + 30% linseed oil meal	312.2	3.50	22	4
Control + 30% linseed grits	302.5	3.38	1	2
Control + 30% linseed oil meal + pyridoxine (7 ppm.)	350.0	3.42	24	3
Control + 30% linseed grits + pyridoxine (7 ppm.)	317.1	3.24	0	12
Control + 30% water-treated linseed oil meal	306.5	3.90	21	3

(Ref.: ADM Research Problem, B299.14, 1951.)

several methods of treating linseed oil meal in an attempt to improve its nutritive value for growing chicks. They found that a marked improvement resulted when the linseed oil meal was treated with water. This treatment consisted of wetting the meal with approximately two times its weight of water and letting the mixture stand for 18 hours at 37° C. (98.6° F.). Their experiments showed that linseed oil meal treated in this manner produced significantly increased growth response in chicks in comparison with untreated linseed oil meal. Both kinds of meal were evaluated in the ration as the only source of supplementary protein.

Kratzer and his co-workers at California found that when linseed oil meal was treated with water (a 1:3 meal-tap water mixture) and allowed to stand for 12 hours at 22° C. (71.6° F., approximately room temperature), with subsequent drying before being mixed into the ration, the growth response in chicks was as good as when the meal was treated for longer periods of time.

Pyridoxine Deficiency

These California researchers were also able to show that linseed oil meal, fed at the 30% level in the ration, produced an apparent pyridoxine (vitamin B_6) deficiency, even though the ration contained many times the amount of this vitamin normally required by chicks for optimum growth. This indicated deficiency could be prevented by adding synthetic pyridoxine to the ration or by treating the linseed oil meal with water in the manner described above.

Investigators at Macdonald College (Canada) reported that the detrimental effects resulting from the use of linseed oil meal in chick starting rations were partly overcome when the meal was processed to a granular texture. While this favorable effect was found to be independent of the improvement obtained when supplementary pyridoxine was fed, it was of the same beneficial magnitude.

Problems With Mucilage

These Canadian workers also found that the presence of mucilage in linseed oil meal was an important factor responsible for its low nutritive value in rations for chicks. In addition, they proved conclusively that the depression in growth resulting from the feeding of linseed oil meal was not due to the presence of cyanogenetic glucosides or trypsin inhibitors in the meal.

Hayward and his associates, in the research laboratory of the Archer-Daniels-Midland Co., confirmed the results of the Canadian work with regard to the benefits to be derived from the preparation of linseed oil meal in granular (grits) form for use in chick starter rations. The data from one of the ADM tests is presented in Table 9.

It will be readily observed that the incidence of arched beak and beak necrosis in the chicks increased when the linseed oil meal was incorporated in the ration in the finely-ground form. It was concluded that the mucilage causes the meal to stick to the chick's beak, thus causing a necrosis and malformation of the beak. This, in turn, interferes with the chick's picking up the feed. Sticky droppings, resulting in pasted vents, "balled-up" toes and wet, messy litter were also observed when the higher levels of linseed were fed as meal.

The ADM investigators expanded these studies to include turkey poults, with essentially the same results as depicted above with chicks. However, they were not able to demonstrate any significant improvement by treating the linseed oil meal with water or by feeding supplemental pyridoxine.

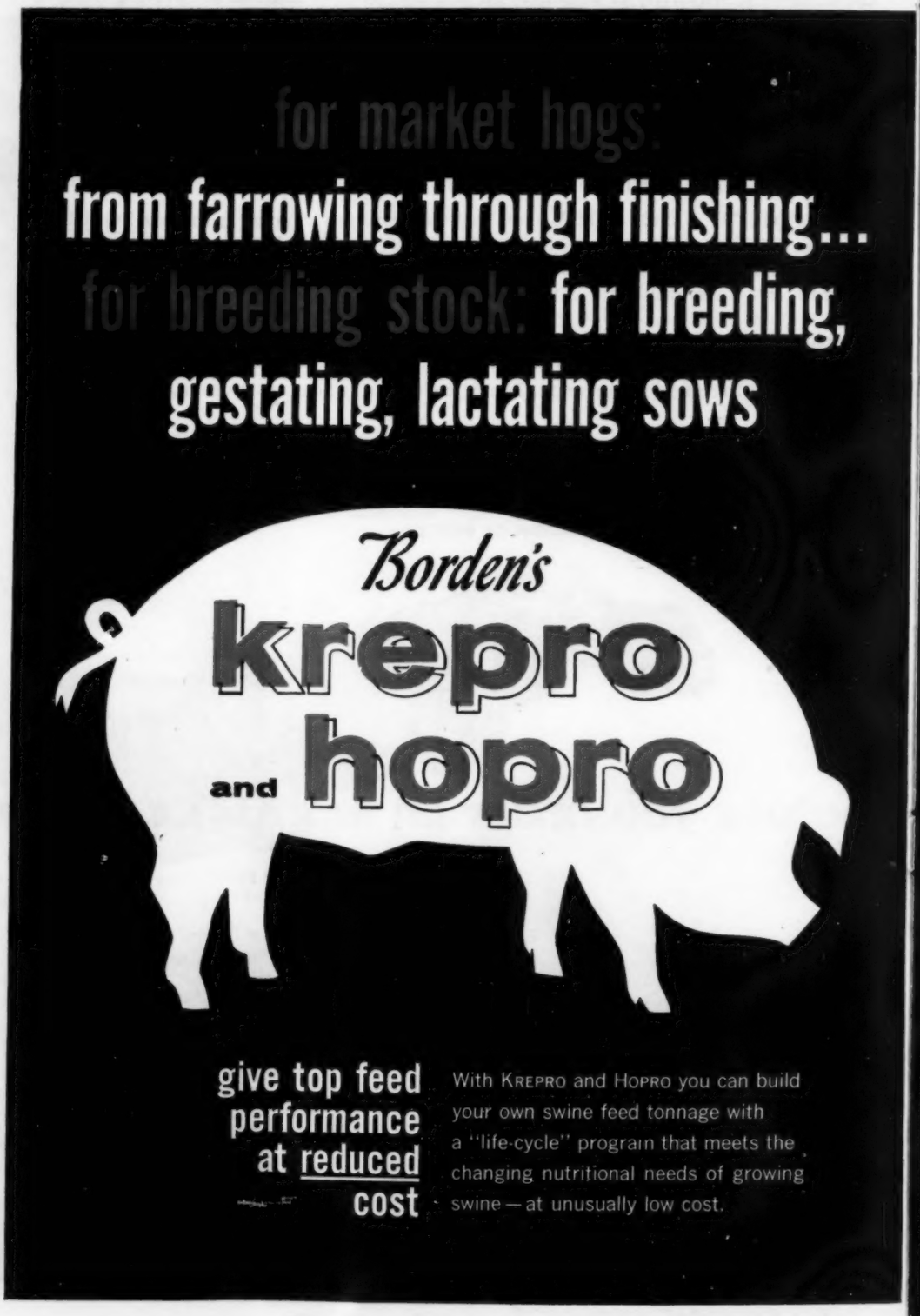
Other Chick Studies

More recently (1955), Schlamb and his fellow researchers at North Dakota have studied this problem by separating linseed oil meal into hulls and cotyledon fractions. Since the hull fraction, credited as the source of most of the mucin in flaxseed, supported surprisingly good growth in chicks in comparison to the whole meal and the cotyledon fraction, these results have been interpreted to mean that the mucilage is not responsible for the growth depression reported on several occasions for linseed oil meal where it has been used experimentally at relatively high levels. This work is being continued under the supervision of Dr. Klosterman at the North Dakota station.

In view of its exceptional value in the feeding of other classes of livestock and the limitations imposed by its chemical and physical properties, it has not been considered practical to use linseed oil meal at extensive levels in poultry rations.

However, linseed oil meal is recommended to be used at the rate of 2.5% in formulations for chicken and turkey all-mash starting and growing feeds (other than broiler feeds), and at the 5% level in poultry laying and breeding mashes. These laying and breeding feeds are formulated to be fed in equal parts with grain, resulting in a level of about 2.5% of linseed oil meal in the complete ration.

In the event of an emergency or improved economics with regard to the use of linseed oil meal as a source of protein, the above-recommended levels may be safely doubled, provided the linseed oil meal is used as grits or in granular form, or provided the mixed feed is fed as pellets or in the form of granules. From 3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to 5% of linseed oil meal may be used satisfactorily in poultry station fattening feeds.

Selenium Poisoning

It is generally recognized that protein can effectively reduce the severity of selenium poisoning. However, there is considerable divergence of opinion as to the degree of protection that may be expected from the use of the various types of supplements which have been investigated. South Dakota researchers have done considerable work on this problem and have found linseed oil to be more effective than purified casein in protecting rats against poisoning with selenium.

These South Dakota workers have presented evidence which suggests that the active protective principle of the linseed oil meal is not the protein fraction. The fat fraction has not been found to be active in this respect. Extraction with 50% ethyl alcohol at 70° C. (158° F.) indicates that this is a successful means of extracting and concentrating the protective principle. In view of this fact, mucilage is ruled out as the protective agent since this extraction procedure concentrates the mucilaginous material in the residual meal.

Other South Dakota investigations have revealed the protection given by linseed oil meal against selenium poisoning in pigs. Further work at this station indicates that this supplement is effective as a preventive of selenium poisoning in poultry. A study of the effect of selenium in sheep rations, in which medium and high protein rations, containing 16% and 25% of linseed oil meal were fed, showed that both of these rations were effective against the detrimental effects of the selenium in comparison with a low protein ration which did not contain linseed oil meal.

Muscular Dystrophy Preventive

Strangely enough, even though linseed oil meal acts as an effective agent in preventing selenium poisoning, Cornell investigators found that its selenium content (1.18 ppm) was beneficial in preventing muscular dystrophy in lambs. Proctor and his associates (Cornell) found that feeding linseed oil meal for one month (prior to lambing) to ewes on a ration known to produce muscular dystrophy was equally as effective in preventing this condition in lambs as the feeding of vitamin E supplements. Since selenium, fed at the rate of 1 ppm in the ration of ewes, was found to be most effective in preventing this disease, these workers have concluded that the protective action of the linseed oil meal was due to its selenium content. The results of their studies are given in Table 10.

Research on this problem is also being carried on at Oregon State College.

Bartley (Kansas, 1957) reported the results of some very interesting experimentation in which it was shown that feeding linseed oil meal to cows before pasturing on legume pastures appeared to reduce the incidence of bloat and cause the condition to subside more rapidly. It was postulated by Bartley that the "mucin" in the linseed oil meal could be responsible for the protective action of this supplement. It is our understanding that further investigation is being carried on at the Kansas station on this beneficial effect of linseed oil meal.

TABLE 10. Selenium, Vitamin E and Linseed Oil Meal as Preventives of Muscular Dystrophy in Lambs

Ration	No. of lambs	Incidence	% Incidence
Basal	18	8	44.4
Basal—linseed oil meal	14	2	14.3
Basal—selenium	21	1	4.8
Basal—vitamin E	15	2	13.3

(Ref.: Jour. Animal Science, 17:No. 4, 1183, 1958.)

Carcass Effects

In October, 1956, the Iowa workers reported the results of a beef cattle feeding test in which they found that the use of linseed oil meal in the ration improved the market value of cattle that were fed stilbestrol. The cattle fed the ration containing linseed oil meal and stilbestrol returned a greater margin per steer over feed cost than the other rations evaluated in this test.

A 112-day cattle feeding test was reported by researchers at the University of Minnesota in September, 1957. Linseed oil meal and soybean oil meal were fed separately and in combination with stilbestrol and/or Terramycin. Regardless of whether it was fed alone or in combination with the additives, linseed oil meal produced slightly faster gains and the linseed oil meal-fed cattle brought a higher price on the market and their carcasses graded higher than the cattle in the soybean oil meal lots.

During the past three years or so, the National Flaxseed Processors Assn. has cooperated with Purdue University and Iowa State College in feeding trials with linseed oil meal and fractions (extracts) prepared from water treatment of flaxseed.

Steer Trials

The tests conducted at Purdue have been feed-lot trials with fattening cattle. The results of a study with

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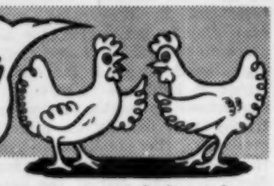

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TABLE 11. Evaluation of Protein Supplements in Cattle Feeding Trials, 1956-57

Supplement	Av. daily gain (lb.)	Feed cost per cwt. gain	Selling price per cwt.	Margin per steer*
Soybean oil meal	1.62	$18.68	$20.50	—$9.38
Purdue Supplement A with soybean oil meal	2.27	18.54	21.75	— 6.44
Purdue Supplement A with linseed oil meal	2.27	17.90	22.00	—12.00
Purdue Supplement A with cottonseed meal	2.15	19.22	21.50	— 0.12
Purdue Supplement A with soybean oil meal and 5% urea	2.24	17.89	22.00	—11.77
Purdue Supplement A with linseed oil meal and 5% urea	2.44	17.80	22.50	—23.36

*Includes both the cost of the steer and the feed cost.
(Ref.: American Feed and Grain, November, 1957.)

steers during 1956-57 are shown in Table 11.

Six lots of 12 steers each, average initial weight 520-526 lb., were fed for a period of 213 days in this test. The cattle were full-fed a grain ration of eight parts of ground ear corn to one part of supplement. These results serve to confirm the data from innumerable other trials in that the feeding of linseed oil meal produced an animal for which the packer buyer was willing to pay more money, thus resulting in a greater return to the feeder. In addition, these data indicated a definite complementary effect between the presence of linseed oil meal in the ration and the utilization of urea.

This work was repeated at Purdue during 1957-1958 with heifers. While the final results of this test have not been published as yet, we have been told by Beeson and his associates that the outcome confirms their earlier work with steers.

These studies are being continued under the auspices of NFPA this year at Purdue and along a slightly different line of attack at the Iowa station.

Iowa Studies

The work carried on at Iowa, under the sponsorship of NFPA during 1957 and 1958, was primarily concerned with the evaluation of a mucilaginous extract of flaxseed in the feeding of beef cattle and sheep. Research personnel at the Archer-Daniels-Midland Co. were instrumental in working out the mechanics of preparing the extract and the method whereby it was incorporated into the ration.

The data from a preliminary 74-day feeding trial, in which flaxseed extract was fed to heavy steers (average weight 1,131 lb.), showed an improvement in rate of gain, feed efficiency, feed cost and dressing percentage resulting from the feeding of the extract. The mucilaginous extract was fed in conjunction with a basal supplement containing no linseed oil meal and the comparison was made within the basal supplement.

At the recent Iowa State College Cattle Feeders' Day (March 10, 1959) a progress report was given on a trial presently being conducted to determine the optimum amount of protein supplement required in fattening cattle, the relative merits of a combination of linseed oil meal and urea as a supplemental mixture and to determine whether linseed oil meal imparts "bloom" to the haircoat when stilbestrol is fed as an additive to the ration for fattening cattle. This test has approximately two more months to continue before the cattle will be slaughtered and carcass data collected.

The preliminary results from this trial indicate that the level of linseed oil meal in the ration is directly correlated with the degree or extent of "bloom" on the hair-coat of the cattle. For example, steers receiving 0.3 lb. of linseed oil meal in their daily ration had 10% more "bloom" than steers receiving no linseed oil meal. When the level of linseed oil meal was increased to 0.7 lb. per head per day, the "bloom" was increased to 52% over the controls. Increasing the level to 1.4 lb. increased the "bloom" to 60% over that of the steers receiving no linseed oil meal.

Measurement of "Bloom"

A very novel and interesting piece of equipment was developed by Summers, the Iowa researcher who conducted this experiment. Working on the theory that "bloom" is actually light reflected from the hair-coat of the animal, he was successful in developing a highly sensitive light meter with which he was able to record differences in the intensity of the re-

(Turn to page 50)

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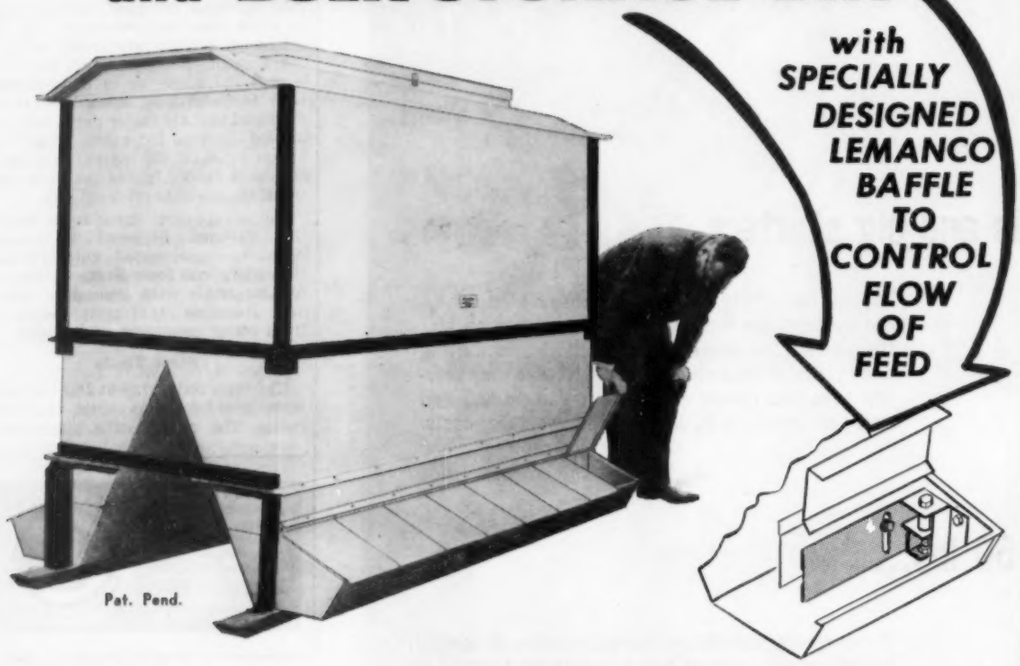
ALL-IN-ONE HOG FEEDER and BULK STORAGE BIN



This new LEMANCO BULK HOG FEEDER is designed for the producer who wants more efficiency in his feeding operation. It is 8 feet long, 3½ feet wide and 7 feet high with a 16-hole feeder. With 36-inch sides, the capacity is 2½ tons. With 48-inch sides, the capacity is 3 tons. The bin can be partitioned lengthwise, if desired, so that it can be used as a fence row feeder for different age hogs on either side. It can also be partitioned crosswise for corn and supplement free choice feeding and can be adapted for filling by air. The sturdy feeder base is made of 14-gauge copper bearing 2-ounce coated galvanized culvert steel. The sides, roof and doors are 16-gauge galvanized. The bin has a 60-degree slope for free flow of any hog feed. The wide roof hatch permits filling to capacity and makes checking of feed easy.

An adjusting screw at each corner of the feeder regulates opening and closing of the baffle to the desired setting to prevent overfilling troughs and wasting feed. With a wrench locknuts are tightened to hold the baffle in place.

Used as an inside feeder, the storage bin can be filled either through the roof with a LEMANCO ROOF DOOR over each feeder, or the auger can be swung in under the roof if high enough.

WITH TOP (Outside)	
MODEL	WEIGHT (Approx.)
OB 83518-48 (3 ton)	965 Lbs.
OB 83518-36 (2½ ton)	900 Lbs.

WITHOUT TOP (Inside)	
MODEL	WEIGHT (Approx.)
IB 83518-48 (3 ton)	855 Lbs.
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Results from 35 trials with Tran-Q show it increased beef gains up to 26% . . . feed efficiency up to 23% . . . profits up to $11.13 per head.

ON RANGE

A field trial at Montgomery Ranch, Lima, Montana, shows an extra $9.62 profit over feed costs by adding Tran-Q to a range supplement (see full report at right).

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Tran-Q, a unique member of the tranquilizing drug family, is an entirely new feed ingredient. Extra gains and feed efficiency you get from Tran-Q are not available from any other source.

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- Adding stilbestrol improved gains 17%; feed efficiency 13%.
- Adding Terramycin improved gains 11%; feed efficiency 9%.
- Adding both Terramycin and stilbestrol improved gains 23%; feed efficiency, 16%
- AND adding Tran-Q in all four cases—by itself . . . or with Terramycin . . . . or stilbestrol . . . or both . . . improved gains an average of 12%; feed efficiency 7%.

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It's a great new sales tool for you. Your feeds containing Tran-Q give extra performance . . . help customers make extra profits. It helps your feeds win customer preference . . . expand your beef and sheep feed markets.

Look what stilbestrol did for your beef feed sales. Now Tran-Q, an entirely new additive, can do the same. And backed by such outstanding performance at colleges, in feedlot and on the range, Tran-Q has a strongly proved potential.

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* **Boosts sheep gains up to 28%**
* **Improves feed efficiency as much as 22%**
* **Increased average return per head as much as $1.71 above the cost of Tran-Q.**

TRAN-Q sold Mr. Montgomery on a range supplement program

Basic ration used in test was a pelleted supplement fortified with Pfizer Vitamin A Palmitate in Gelatin and Terramycin. 700 head received this ration. 867 head were fed the same ration to which Tran-Q had been added.

Before switching to a range supplement feeding program, the Montgomery Ranch range-reared their yearlings. Their last bunch on this program had an average scale weight after shrink of 694 lbs. Last year, Montgomery used a range supplement with Tran-Q. These steers averaged 850 lbs. . . . an increase of 156 lbs. These results show it pays to use a range supplement. And it pays to fortify it with Tran-Q.

After a Tran-Q trial with over 1,500 steers (867 head received Tran-Q in their ration; 700 did not), Mr. Montgomery offered this summary of results:

"The cattle industry is seeing many management and operational changes. For example, this experiment proved to me that use of tranquilizer will play an important part in rangeland supplementation programs.

"Just a few of the real benefits of Tran-Q were:

"—greatly increased weights, higher grade and quality.

"—improved livestock temperament which resulted in practically no fence-trailing, allowed easy handling and created a general attitude of well-being.

"—improved, and thus more profitable range management. As the result of wise locating and relocating of automatic feeders, we were able to make more efficient use of range grass.

"To me, this is progress—intelligent change which the entire cattle industry could adapt to help maintain its competitive position today."

Wayne W. Montgomery, Jr.
part owner and manager of the Montana Ranches
of the Montgomery Ranch, Lima, Montana

HERE ARE THE RESULTS

	Control	(1)	Tran-Q
No. days (2)	141		141
No. head started	700		867
Av. initial wt., lb.	551.6		539.9
No. head finished	691		796
Av. final wt., lb.	822.1		850.8
Av. gain, lb.	270.5		310.9
Av. daily gain, lb.	1.92		2.20
Increase in ADG,%	———		14.58
Total supplement, lb.	316300		381000
Av. supplement, lb.	451.85		439.45
Av. daily supplement, lb.	3.21		3.12
Lb. supplement/lb. gain	1.67		1.42
Increase F. E., % (3)	———		14.97
Supplement cost/100 lb., $ (4)	2.90		3.07
Av. supplement cost/head, $	13.10		13.48
Av. value of gain, $ (5)	66.95		76.95
Av. rat. over feed/head, $	53.85		63.47
Av. increase/head over control, $	———		9.62

1. Supplement fed controls contained 25 mg. Terramycin per pound. Supplement of Tran-Q group contained 1.675 mg. Tran-Q (hydroxyzine hydrochloride) 25 mg. Terramycin per lb.
2. May 16—October 4, 1958
3. Feed efficiency is based on supplement only. Pasture was not considered.
4. Control supplement $58.00/ton; Tran-Q supplement $61.35/ton.
5. Selling price $24.75 cwt.

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William P. Brown

JOINS BORDEN—William P. Brown has been appointed manager of advertising and sales promotion for the feed supplements department of the Borden Special Products Co. He previously was with the international division of the Vick Chemical Co., and before that served as sales promotion manager of the Sessions Clock Co.

flected light. In the past, the evaluation or determination of "bloom" has been based entirely on visual observation with a resultant wide divergence in the values placed on the same animal or group of animals by different observers. This is the first instance in which a device or method has been perfected which will place a numerical evaluation on varying degrees of "bloom."

Summers also pointed out that the results of this test to date indicate the costs of gains in fattening cattle can be definitely reduced by using a combination of urea and linseed oil meal as the source of supplemental protein. Good performance was obtained when urea was used to supply part of the protein equivalent.

The beef cattle researches reviewed here leave little doubt but what present-day studies are confirming the results years ago of numerous tests at state agricultural experiment stations, as well as confirming the claims made through generations by practical feeders that linseed oil meal has no equal among commonly used feed supplements for producing unmistakable "hair coat bloom" and top-notch condition in fat cattle, making them sell better, dress higher and yield more top-grade meat when marketed.

It would seem that the meaningful significance of confirming the results of years ago with linseed lies in the fact that in these feeding trials of recent years linseed oil meal not only excelled other commonly-used protein supplements, but it did this with or without some of the popular present-day additives, such as stilbestrol, antibiotics and urea. Furthermore, it appears that perhaps linseed meal's unique properties are of greater importance today than in former years due to the general use made now of these additives (hormones, antibiotics and urea), all of which tend to stimulate rapid gains in cattle but usually at some sacrifice in the degree of condition of the finished cattle. The proper combination of linseed and urea, with the correct level of hormone as well as antibiotic, will, in view of current scientific findings and feeding practices, constitute the perfect combination of additives in the beef cattle supplement for maximum profits from fattening beef cattle. This would be accomplished through more rapid gains, improved feed efficiency, top selling price, a higher dressing percent and higher carcass grades.

Research in Progress

It is gratifying to know that at least a few research projects are in progress, even though more projects are needed, intended to explore such things as (1) the factor(s) in linseed oil meal responsible for the several separate functions accredited to linseed; (2) the extent and mode of action of linseed's mucin or mucilaginous substance; (3) the optimum level and length of time for feeding linseed oil meal to fattening cattle for best results in terms of feed lot performance, selling price, dressing percent and carcass grades, and (4) the correct level for linseed and urea in a combination supplement for ruminants, especially for fattening cattle.

The researches summarized here are just a start as to nature and scope on an over-all series of studies that would seem justified for this unusual ingredient, linseed oil meal. It seems to us that the development by Summers and associates at Ames (Iowa State College of Agriculture) of a "gadget" for recording "hair coat bloom" accredited to linseed, and to linseed alone, could very well go down in scientific history as the turning point in these researches on linseed. The use of such a metering device should encourage an extension of these studies on linseed oil meal to dairy cattle of different ages and to other ruminants where a suitable end point or numerical value has been lacking these many years as a logical means for systematically evaluating the several acclaimed merits of linseed oil meal for all types and kinds of ruminants.

Alabama Reports Boost In Feed Tonnage Sold

MONTGOMERY, ALA. — Poultry feed tonnage sold in Alabama during the month of March led the state's over-all feed tonnage sold to a 6% gain over March, 1958, the Alabama Department of Agriculture reports.

March's total was 108,758.54 compared with 102,778.63 during March a year earlier. Poultry feeds, with a total of 72,371.86 tons this year, compared with 61,954.73 during March, 1958, accounted for about 67% of all feed tonnage sold.

Poultry feeds and hog feeds were the only two varieties to show an increase. Hog feeds made a mild increase from 5,319.94 in March, 1958, to 5,889.06 during March of this year. Horse and mule feed, dairy feed, oil meals, cereal by-products, molasses and other feeds all showed a drop from the previous March.

Enacts Poultry Bill

SALEM, ORE.—A bill given final passage by the Oregon legislature provides that all fryers sold in Oregon must carry a label showing the state where they originated and also proclaiming that no food preservatives have been used. Sen. Robert Straub, Springfield, who handled the bill in the senate, declared that the influx of fryers from the South has depressed the Oregon market.

HOLDS GRAND OPENING

FLUGSTAD, IOWA — The Flugstad Farmers Cooperative recently held grand opening of its new feed mill. The plant has 22 bins, and equipment includes a Strong-Scott mill, Jacobson mixer and Roskamp roller.

Feeding Test Reports Scheduled for Annual Oregon Field Days

CORVALLIS, ORE. — Oregon producers of beef cattle and swine will be guests at the annual Beef Cattle and Swine Field Days to be held at Oregon State College here May 18-19.

Scheduled for the two-day program are reports designed to bring producers up to date on research and other developments.

Sponsored jointly by the dairy and animal husbandry department at Oregon State and the Western Oregon Livestock Assn., the program will be devoted May 18 to cattlemen and the following day to swine producers.

One of the highlights of the beef cattle program will be a report on recent developments in beef cattle nutrition. Speakers will be Dr. J. E. Oldfield, Dr. D. S. Church and Dr. D. C. England, all members of the animal nusbandry staff. They will discuss "White Muscle Disease," "Pellet Feeding" and "Results of Feeding Experiments," respectively.

Also planned for the day are reports on livestock research under way in Oregon, breeding research, red meat determination and a tour and demonstrations at the college barns.

Swine producers will hear Dr. Oldfield discuss "Feeding Preweaning Pigs," and they will also be given an address on "Improvement of Barley Rations" by L. M. Larsen. Discussions are also scheduled on swine disease prevention, commercial hog raising, swine breeding research, swine testing and a tour of the barns where visitors will be given reports on feeding experiments.

Planned for each day is a panel-question period when producers can ask the speakers questions. A highlight of the event is a dinner the evening of May 18 when Mrs. Lois Sather, a member of the Oregon State College food and dairy technology department, will talk on the subject, "On the Front Burner Through Research."

W. E. Mullin to Head Minneapolis Group

MINNEAPOLIS — W. E. Mullin, Mullin & Dillon Co., has been elected president of the Minneapolis Grain Shippers Assn. for 1959-60. Other new officers are Thomas F. Toohey, Farmers Union Grain Terminal Assn., first vice president; John Cole, Cargill, Inc., second vice president, and Pete Stallcop, Northwest Country Elevator Assn., secretary.

Newly-elected directors are Brooks Fields, Burdick Grain Co., and A. H. Anders, Central Soya Co.

Reelected directors are John H. Dunn, Van Dusen-Harrington Co.; Allan L. Burdick, Burdick Grain Co., and Donald Fraser, Cereal Grading Co.

$250,000 Mill Fire

WATERTOWN, WIS. — An early morning fire recently destroyed the Old Elms Mill here, said to be one of the largest feed mills in southern Wisconsin. Losses were estimated at $250,000. The mill included a four-story grain elevator with a capacity of 300,000 bu. Offices of the firm, located across the street from the mill, did not burn.

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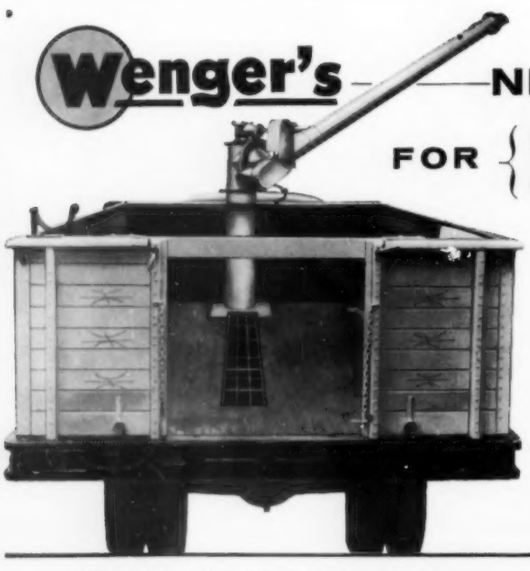

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Lilly INTERVIEWS

VERNON FREDERICKSEN, WALLINGFORD, IOWA

"I definitely plan to use Hygromix from now on"

"Worming pigs used to be a big problem. It was hard to get them to take enough in the water, and it slowed their gains, too. Hygromix feeds do the job automatically."

by Eugene S. Hahnel

Vernon Fredericksen understands well why Hygromix brings an entirely new concept of worm control to swine management. He wraps it up neatly with this observation: "Worms you *see* have already done their damage."

Hygromix in feed protects pigs throughout the critical growing period. Also, by killing baby roundworms, nodular worms, and whipworms day after day as they enter the intestinal tract, Hygromix prevents them from doing intestinal damage or ever reaching egg-laying maturity.

Proving that he understands the significance of his own statement, Vernon conducted a simple test. "Last fall I checked some of my 135-140-lb. Hygromix-fed pigs," he describes. "I locked them up individually and gave them a heavy dose of purge-type wormer with a syringe. Over a 36-hour period I checked the stools from each pig. I couldn't find a single worm!

"I repeated the test this spring on two pigs out of each litter. Again, I couldn't find any worms. Believe me, when you don't have the worm problem, you're rid of a big headache. For one thing, my pigs finish much more evenly than before Hygromix."

"We think controlling worms with Hygromix will save a lot of feed," says Vernon Fredericksen (right) and feed manufacturer's representative Warren Christensen.

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Washington Cattle Talks Cover Nutrition, Breeding, Marketing

By DR. I. A. DYER
Washington State College

PULLMAN, WASH.—Some 300 persons attended the recent fifth annual Beef Cattle Day at the State College of Washington and heard nine reports on various phases of beef cattle breeding, nutrition and marketing.

The program included the following talks:

"Why $1 Steaks from 25¢ Cattle? —The Way of Beef Prices and Spread," by Dr. M. E. Ensminger.

"Dwarf, Dwarf-Carrier and Dwarf-Like Cattle," by Dr. E. S. E. Hafez.

"Effect of Tranquilizers (Hydroxyzine) on Cattle," by A. T. Ralston.

"Effects of Pellets, Hayfers and 3, 3' Diallylhexestrol on Fattening Steers," by Dr. I. A. Dyer.

"Cow Weights and Measurements and Their Relation to Weaning Weight of Calves," by Dr. C. C. O'Mary.

"Factors That Affect Digestibility of Feeds," by W. K. Roberts.

"Effect of Feed Additives on Carcass Quality," by E. H. Rupnow.

"A Study of the Yearly, Seasonal and Area Variations of Vitamin A, Carotene and Certain Macro and Micro Elements in the Blood and Liver of Beef Cattle in the State of Washington," by A. T. Ralston.

"Outlook for Beef Cattle Prices," by Karl Hobson.

PRICE SPREAD—Dr. Ensminger started the program by summarizing the reasons for the spread between the price of cattle on foot and the retail price of beef. He indicated that those who compare on-the-foot with on-the-hook prices—those who are critical when steaks from choice beef cost about four times the price paid per pound for live cattle—sometimes fail to consider that an animal is not all meat, and that nature does not make many choice cuts or top grades.

"They may fail to recognize that only a little more than half a steer is beef, and only 8% of it is sirloin steak," he said. "They sometimes forget that only two loins can be obtained from each carcass upon slaughter. They may fail to recognize that not all meat animals are suitable for the more expensive cuts. They overlook the fact that a side of beef consists of stew meat, shanks, and shoulder roasts as well as fancy steaks and chops, and that there is trimming to do."

Dr. Ensminger said the price of the market animal is only one factor which determines what the housewife pays for meat. He noted that the total cost also includes such expenses as freight, labor, packaging and risk.

"Since these costs are fixed, a temporary drop in on-foot market prices may mean only a small reduction at retail," he commented. "Then, too, by-products are less profitable than in years gone by, with the result that the packer must figure on making more money from the carcass."

DWARFS — Dr. Hafez indicated that different types of dwarf and dwarf-like cattle have been observed in beef and dairy breeds. These types, he said, have been ascribed to a variety of genetic factors resulting in small calves with different anatomical abnormalities.

Two possible reasons for the increase in snorter dwarfs were mentioned by Dr. Hafez:

"(1) It is possible that the dwarf gene is not completely recessive. Consequently, the carrier animals exhibit certain characteristics which cause breeders to favor them in selection, thus increasing the frequency of the dwarf gene.

"(2) It is also possible that breeders could have accidentally selected for the dwarf gene if, purely by chance, the dwarf gene occurred in a few particularly popular sires."

Snorter dwarfs have a number of similar characteristics to other dwarfs or normal cattle. However, some differences do exist—among them are:

1. Snorters have flaccid muscle tissue resulting in a pot belly.
2. Many are chronic bloaters.
3. Snorters have lower respiration rates, and lower hemoglobin, hemotocrit and white cell counts than normal calves.

Dr. Hafez pointed out that many studies have been made to perfect a "rapid" test for dwarf carriers but, at present, none are considered reliable. "Since no satisfactory chemical or anatomical tests are available," he said, "the pedigree information and progeny tests are in use today. Either of these tests are valuable in eliminating dwarfism but both are slow and expensive."

TRANQUILIZERS—Mr. Ralston discussed the use of tranquilizers in beef cattle rations, with most of his comments devoted to hydroxyzine (Tran-Q), since it has been released by the Food and Drug Administration and has been used in a number of tests at the Washington station.

An experiment using five levels of hydroxyzine hydrochloride was reported. These levels were 0, 2.5, 12.5, 62.5 and 312.5 mg. per head per day in a barley-alfalfa type ration. Rates of gain were increased by .25 lb. over the control group when either 2.5 or 12.5 mg. per head daily were fed. The 62.5 mg. level produced gains comparable to that of the control steers while the 312.5 mg. level reduced gains .23 lb. below the control group. Efficiency of feed utilization was 13% higher than that of the control group when either 2.5 or 12.5 mg. of Tran-Q were fed.

Mr. Ralston said fecal and urinary collections were made to determine metabolizable energy and the digestibility of the various nutrients. A progressive decrease in the volume of feces and urine was noted as hydroxyzine was increased. Although no visual sedation was observed, the excretion data indicate that Tran-Q perhaps does have a sedative effect when given in larger than recommended quantities.

PELLETING AND DIALLYL—Dr. Dyer discussed the merits of pelleting and emphasized that considerable variation in response to pelleting has occurred.

Pelleting concentrates for cattle has not increased rates of gain and profit as has the pelleting of hay. Reports to date indicate that pelleting of hay results in increases in gain from 0 to 300%, with an average of approximately 30%. The response to pelleting or waferizing hay depends, of course, on the amount and kind of hay as well as to the size of cattle that are fed.

Pelleting reduces labor, transportation, storage and feeding costs and reduces waste. When a machine is perfected that will pellet or waferize from the windrow or as the hay is cut, the handling costs will be further reduced.

Dr. Dyer and Mr. Rupnow reported that one of the newer additives, 3, 3' diallylhexestrol (a diphenyl hexane derivative) has been used for two years at the Washington station. This compound (diallyl) increased gain by .35 lb. and efficiency of feed utilization by 12% when 25 mg. were fed daily. Fifty mg. increased gains by .25 lb. and efficiency of feed utilization by 10%.

No side effects were observed at either of the diallyl levels. Immature intact female rats were fed various parts of edible and inedible meat from the diallyl fed steers. This test showed no estrogenic activity in the

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Divers Feed Store and Elevator operates as a service center for a community 12 miles wide and 18 miles long. In this area, Divers delivers Purina Chows in bags or in bulk . . . picks up grain for Check-R-Mixing or for sale . . . weighs hogs and cattle to help farmers know their feed costs . . . operates a grain bank for the convenience and profit of customers.

With demonstrations and group meetings, Mr. Divers carries late Purina Research findings to his customers and prospective customers. Such activities have added to farm income and profits of farmers around Auxvasse.

Outstanding customer service has built Divers Feed Store and Elevator Company into one of the largest businesses in the Auxvasse market.

Farm folks look to Mr. Divers for advice. Here, Everett Watwood (left) discusses a feeding problem with him.

"I fed exactly what the Check-R-Mixer called for," said Floyd Durks, "and my hogs averaged 203 pounds at the market when they were 4½ months old."

Mr. Divers stocks Purina Chows to fit the needs of his customers, whether they want a complete feed or a Check-R-Mix ration using local grains.

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meat as a result of the diallyl. In addition, steers fed the diallyl were better marbled than control steers.

Diallyl has not been released by FDA and consequently is not now on the market. Since this compound shows considerable promise in increasing performance and quality without producing side effects, it should be studied under a wide variety of conditions.

WEANING WEIGHT OF CALVES—Dr. O'Mary summarized the relationship of cow weights and measurements to the weaning weight of their calves. He indicated that the weaning weights of calves should be adjusted for age, sex and age of dam in order to do a better job of retaining cows in the herd on the basis of their performance.

"It is important to stress longevity in cows," he said, "since mature cows tend to produce heavier calves than do the younger cows."

The effects of cow weights on calf weaning weights are complicated by other factors, such as the cows' milk production and the management conditions. Certain body measurements on cows may prove useful in predicting the weaning weights of their calves.

FEED DIGESTIBILITY—Mr. Roberts stated that the lignin content of roughages affects digestibility and that the lignin content of a roughage will vary from one plant species to another and within a species, depending upon the stage of maturity. Generally, as plants become more mature their lignin content also increases. Lignin per se is highly indigestible. Furthermore, it exerts a masking effect on some of the plant nutrients and makes them less readily digested. From this it is evident that to attain maximum utilization of forages they should be harvested at the proper stage of maturity."

Another factor which limits digestion of low quality roughages is the lack of certain nutrients. This is quite well shown by the effect that mineral supplementation has on digestibility of rations containing high levels of low quality roughages. A number of research workers have shown that addition of alfalfa ash to rations containing high levels of corn cobs, cottonseed hulls or wheat straw will improve crude fiber digestion. This response is probably due to an increase in activity of the microorganisms in the rumen, which results in greater decomposition of the cellulose in the roughage.

TRACE MINERALS AND VITAMIN A—Mr. Ralston reported on a "trace mineral-vitamin A study" that has been in progress in Washington during the past two years. A total of 20 cooperators provided 10 cows each which were bled and biopsied four times annually. These cooperators were located in the principal cattle producing areas of the state.

Both blood and liver analyses indicated that vitamin A nutrition was adequate in Washington from 1956 to 1958, he reported. It is conceivable that differences might occur in cows when the summers are dry and the following winter is cold and prolonged. Such conditions did not prevail during this study.

In reference to the minerals, Mr. Ralston indicated that the physiological importance of minerals has been apparent for many years. He said experimentation in the past 50 years has established an essential dietary need for the following minerals: Calcium, phosphorus, sodium, potassium, chlorine, magnesium, iron, sulfur, iodine, manganese, copper, cobalt and zinc. Many other minerals with no apparent function are found in the animal body. Some of these may be deposited in the tissue simply because of the large quantities ingested in the diet. This "non-functional" list is constantly becoming smaller, as with each new biochemical technique, essential functions are found for them.

It was reported that some 23 minerals in the livers of the cows have been determined by spectrographic analysis. Copper was the only mineral (for which normal liver levels have been established) found to be deficient in Washington. A definite copper deficiency was observed in 9 of the 20 herds tested.

Perhaps some of the remaining 11 herds would have been deficient if they had not been supplemented with a mineral mixture containing copper or had not consumed hay purchased from a copper healthy area, Mr. Ralston said.

BEEF CATTLE PRICE OUTLOOK—Mr. Hobson discussed beef cattle prices and the factors that affect them. He reported that a large part of the week-to-week and month-to-month changes in cattle prices are caused by changes in the supply of beef. Changes in beef supplies are due largely to changes in beef slaughter in this country although the size of beef imports plays a noticeable role. Imports of beef and beef cattle into the U.S. in 1958 amounted to 8% of the total beef consumed in the country.

"Beef is a choice food that most people do not tire of even if they eat it every day," Mr. Hobson said. "Most people will resist a decrease in the amount of beef they have to eat. They will bid up the price for beef substantially rather than reduce their consumption. At least this is true over short periods of a year or two. On the other hand, consumers are not likely to increase their consumption of beef very fast unless they notice that prices are substantially lower. Thus, a change in the supply of beef available per capita will bring a sharper change in prices, whether the change starts from a high per capita level of consumption or a low one.

"Roughly, a 10% decrease in the per capita supply of beef from one year to the next will bring about a 20% increase in the price of beef cattle. Likewise, a 10% increase in the per capita supply of beef will bring about a 20% decrease in the price of beef cattle at the farm or ranch."

The farmer demand for beef cattle is a very important factor in determining beef prices that is frequently overlooked. One of the major reasons why beef cattle prices in 1958 were higher than in 1956 was that farmer demand was stronger, primarily because of the relief from drouth in the Southwest.

Poultry By-Products Plant to Be Erected

FAYETTEVILLE, N.C. — Processing of feed concentrates and stabilized fats is expected to be under way this fall at a new $1 million plant to be constructed here.

Two buildings will be erected to house the operations of the Cape Fear Products, Inc., and National Processing Corp. Henry G. Swartz, president, and Milton S. Abelkop, treasurer, of the firms, will direct operations.

According to reports, the plants will obtain material from poultry processing plants in this area and will distribute finished products to North Carolina feed mills and for export.

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Vitamin D Dosage For Milk Fever Prevention Cut

WOOSTER, OHIO—New data released recently by the Ohio Agricultural Experiment Station indicates that dairymen who feed vitamin D during a short period before calving as a milk fever preventive can cut back the dosage without significantly reducing protection.

An earlier Ohio report had indicated that protection can be gained by feeding 30 million units of vitamin D daily for three to seven days prior to calving. A field experiment completed recently, however, indicates that the vitamin D dosage can be reduced from 30 million units daily to 20 million, Dr. J. W. Hibbs and Dr. W. D. Pounden reported in a recent issue of Ohio Farm & Home Research, station publication.

The recent experiment, which began in 1955, was carried out with the help of 30 Ohio Jersey breeders who agreed to cooperate with the station in feeding vitamin D concentrates according to directions. Only cows in their herds that had previously had attacks of milk fever were used. Three vitamin D dosages were tested: 15, 20 and 30 million units daily.

The researchers said results of the experiment show that when vitamin D is fed beginning five days before the due date and for not over seven days, 20 million units is as effective as 30 million units. About 80% protection can be expected from either dosage. Because it is impossible in every case to predict the due date accurately, about one fourth of the cows were started a little too early or too late for maximum protection. But even in this group there was some protection.

The procedure recommended by the authors was this: Beginning five days prior to the predicted due date, feed 20 million units of vitamin A daily, half in the morning and half in the evening. Continue until the day after the cow calves or for seven days, whichever comes first. In no case should vitamin D be fed more than seven days. This provides a margin of safety from toxic effects, the authors said.

New Sales Territory

HUTCHINSON, KANSAS—Monroe Grain Aeration Co., Piqua, Ohio, recently announced the establishment of its new western division sales territory, with headquarters in Hutchinson. The new territory will be under the direction of Raymond Monroe, partner in the firm, who said the company will continue to maintain its present facilities in Piqua.

FEED MAN KILLED

BURLINGTON, VT.—John P. McGovern, 34, Jeffersonville, Vt., a two-term director of the Vermont Feed Dealers & Manufacturers Assn., (1950-1956) and general manager of the T. J. McGovern Stores, Inc., was killed instantly when the car in which he was riding crashed into a tree. His brother, Thomas, driver of the car, suffered arm and leg fractures. Thomas told police he fell asleep at the wheel.

Corn Industries Creates Public Relations Post

WASHINGTON—The Corn Industries Research Foundation, Inc., has announced the appointment of Robert D. McMillen to a newly-created post of public relations manager.

Mr. McMillen was assistant to the secretary of agriculture from 1954 to 1958. He has been Washington editor of Farm Journal, associate editor of Pathfinder—Town Journal, assistant Sunday editor of the New Haven (Connecticut) Register, director of information for the National Farm Chemurgic Council, of which he is still secretary, and an executive and consultant in agricultural and industrial public relations.

The Corn Industries Research Foundation, Inc., serves the corn wet-milling industry, consisting of 11 companies which manufacture starch, syrups, dextrose, oil, feedstuffs and other products from corn.

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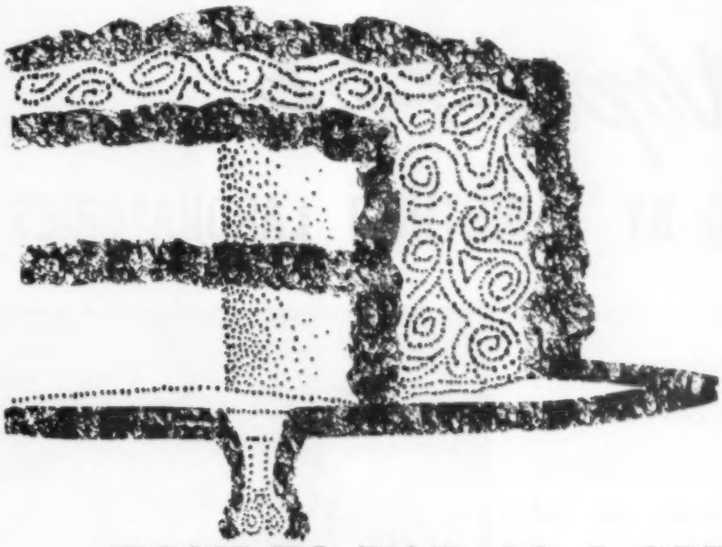

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Broiler Performance Test Results Reported

FAYETTEVILLE, ARK.—Average live weight of broilers at eight weeks is still climbing in random sample meat performance tests at the University of Arkansas' Agricultural Experiment Station, according to Dr. N. R. Gyles, associate poultryman.

Commercial entries in the test recently completed weighed an average of 3.17 lb. when eight weeks old to set a new high for the 14th such test. Males, separated from the females, averaged 3.48 lb. compared to 2.86 for the females, which tended to have slightly more uniform carcasses than males.

Experimental entries had an average live weight of 2.95 lb. The average for males was 3.16 lb. and for females it was 2.74 lb. Here, too, the females produced carcasses of slightly better uniformity.

For the second consecutive test in which males and females were grown separately, males produced more meat per pound of feed. Males of the commercial entries gained a pound on 2.03 lb. feed, while females required 2.16 lb. Over-all average for both sexes was 2.1 lb. of feed needed to produce a pound of chicken.

For the experimental entries, the average ratio for both sexes was a pound of chicken on 2.07 lb. feed. Males needed the same amount of feed (2.03 lb.) to produce a pound of chicken as for the commercial entries, but the experimental females needed 2.11 lb. feed per pound of chicken compared to the 2.16 lb. feed requirement for the commercial entries.

NEW PRODUCT — Darling & Co., Chicago, has introduced a new product—a mineral mixing concentrate in 25-lb. bags. The company says the "25 lb. of concentrate replaces 50 lb. of ordinary mixing mineral." C. C. (Chuck) Jensen, sales manager of the firm's mineral feed division, says advantages are in freight savings, smaller storage requirements and easier handling. The young lady is Pat Lee.

National Bag Sewing Contest to Be Held

MEMPHIS — The National Cotton Council and the Textile Bag Manufacturers Assn. have announced plans to sponsor a national bag sewing contest as part of the women's programs at 49 fairs in 33 states this summer.

The two top prizes in the contest, which will be open to anyone who sews, are a week's visit to Hollywood in addition to cash, household appliances and merchandise gifts.

Print or plain bags must be used for making all entries. Local winners will enter the national finals, and the two champions, along with a third-place winner receiving $250, will be selected at the finals Nov. 4 in Memphis.

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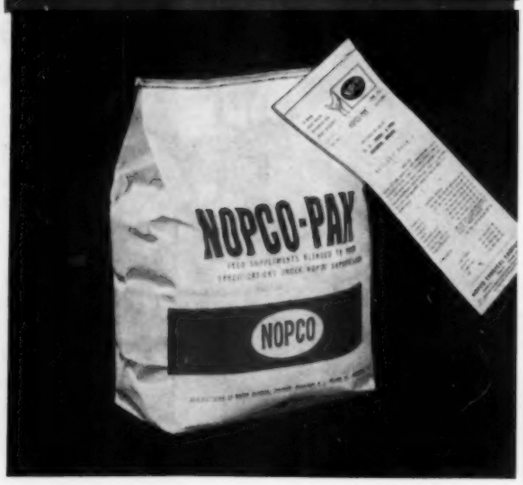

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Nutrition Studies Being Planned for New North Dakota Center

FARGO, N.D. — Full capacity research operations are expected within a few months at the North Dakota Agricultural Experiment Station's new animal nutrition research center here.

A recent station announcement said projects now being planned will involve nutrition of cattle, sheep and swine "in a concentrated effort to seek out the most efficient and profit-making combination of North Dakota animals and North Dakota feeds for the farmers and ranchers of the state."

Hog feeding research will be moved into the facilities within the next few weeks, it was announced. Planned in the fall is a feeding project involving 132 calves in a comparison study of grains and the physical forms in which they can be fed, such as meal, pellets, or rolled, plus stilbestrol implants and other adjuvants.

"With the sharp increase in interest in feeding cattle in North Dakota as a means of marketing the state's abundant high-quality feed grains in the form of finished meat animals, sound information based on feeding under actual conditions found in the state is badly needed," the announcement said. "No cattle feeding trials could be undertaken by the station until the center is finished because of the lack of facilities."

One project scheduled will attempt to find the most profitable type of processed feed—whether by pelleting, grinding, crimping, rolling, crushing, or a combination of methods.

The California Pellet Mill Co. has presented the experiment station with a complete pelleting mill, now being installed. This equipment has a capacity of about three tons an hour, and it is equipped to take dies to make pellets from 3/32 to ⅞ in. in diameter. The mill will be used in connection with other feed processing equipment.

Research with pelleted feeds is under way in North Dakota with beef cattle, sheep, swine and poultry, but the new plant will permit much greater experimental latitude with trial batches of feed, the announcement said.

Experiment station research in pelleted barley rations for swine has brought a new industry, the production of pelleted barley feeds, to the state. The experiment station announcement said it is hoped further research will bring to light other uses for state products.

Economists Want Free Farm Markets—Survey

CHICAGO — Farm programs have not substantially helped farmers, but have hurt taxpayers and commodity markets, declares Robert C. Liebenow, quoting results of a survey by agricultural editor John Strohm.

Mr. Liebenow is president of the Chicago Board of Trade. Mr. Strohm conducted his survey among agricultural economists of the Land Grant Colleges.

Mr. Liebenow quoted parts of a Farm Journal article by Mr. Strohm, as follows:

"1. Any laws further ham-stringing the free market will hurt the farmer, the consumer and the nation.

"2. Legislation has not and cannot solve the farm problem, although the 'right kind might help.' But few economists believe we have had the right kind, and most are pessimistic about getting it in the future.

"3. Schemes in foreign countries to guarantee all farmers a fair income have been costly failures.

"4. The law of supply and demand is not out of date—there is no substitute for the free market."

Mr. Liebenow's comments appeared in a recent Board of Trade news report. "Some who read the Strohm survey might conclude that our agricultural economists show excellent hindsight. This is not so. These two surveys, spaced 12 years apart, show that economists disapproved of government price programs immediately after World War II, and that after another 12 years of federal failure to solve the basic problems, economic experts still stand fast against government interference with marketing activities," Mr. Liebenow said.

New Distributor Named

CEDAR RAPIDS, IOWA—Highway Equipment Co., Cedar Rapids, manufacturer of spreaders and bulk material delivery equipment, has announced that Heil Equipment Co. of Boston, Brighton, Mass., is a new distributor for the Iowa firm. Heil will sell and service Highway Equipment's New Leader spreaders and mobile blenders. The Massachusetts company will serve Maine, New Hampshire, Rhode Island and eastern Massachusetts.

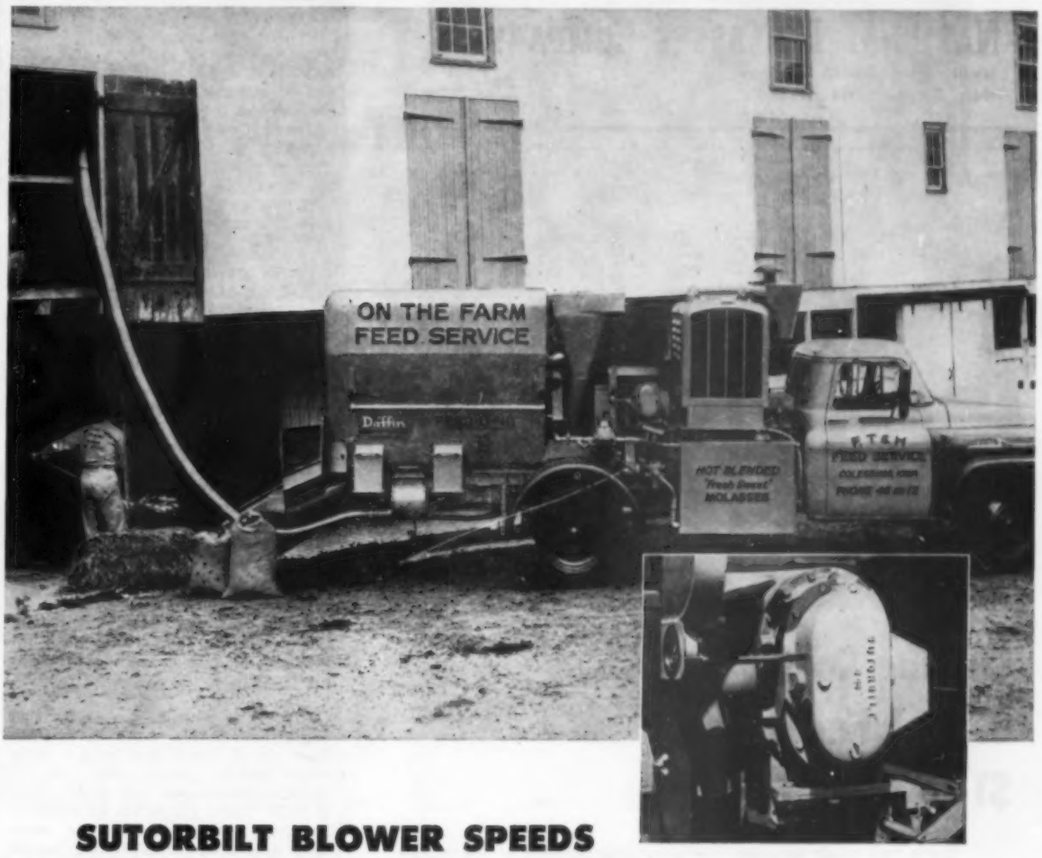
Iowa Professor Heads Staff at Texas Tech

AMES, IOWA—Dr. Ralph Durham, Iowa State College professor of animal husbandry, left his Iowa post May 1 to become head of the animal husbandry department at Texas Technological College, Lubbock.

Dr. Durham joined the Iowa State staff in 1955. He helped establish swine testing associations in about 40 Iowa counties to improve market hog quality.

Driers Installed

MINNEAPOLIS — Increasing use of grain driers by feed and grain firms is indicated in a recent report of installations by Daycom, Inc., Minneapolis, manufacturer of the Arid-Aire driers. The report showed eight installations in a total of four states. Five of the installations were made in Minnesota and one each in Texas, Wisconsin and Indiana.



SUTORBILT BLOWER SPEEDS OPERATION OF NEW DAFFIN FEEDMOBILE

The advanced mobile feed mill pictured above prepares feed formulas right on the farm. Developed by the Daffin Manufacturing Co., Lancaster, Pa., it takes home grown grains and hays, grinds and blends them with molasses and returns finished feed to storage . . . eliminating the trouble and expense of hauling. A compact Sutorbilt rotary positive pressure blower is the conveying force and provides a constant pressure of 4-6 lbs. It moves the feed through the pipeline at a steady velocity, sufficient to unload a 1-ton mixer batch in 3 to 6 minutes, depending on the type of feed. The blower requires only ordinary lubrication and is practically maintenance-free.

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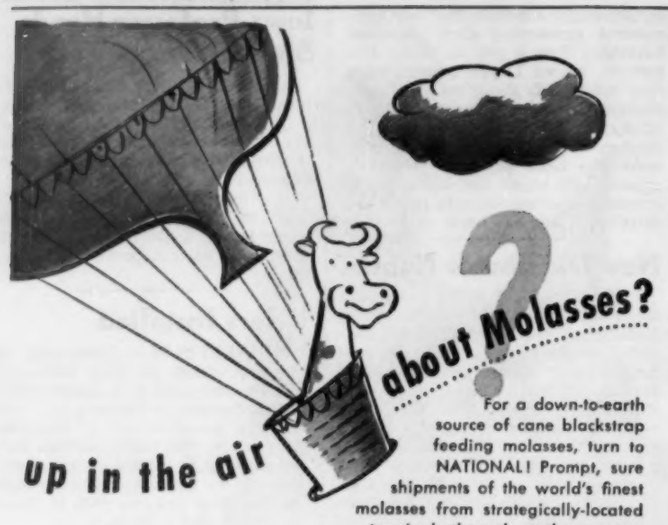

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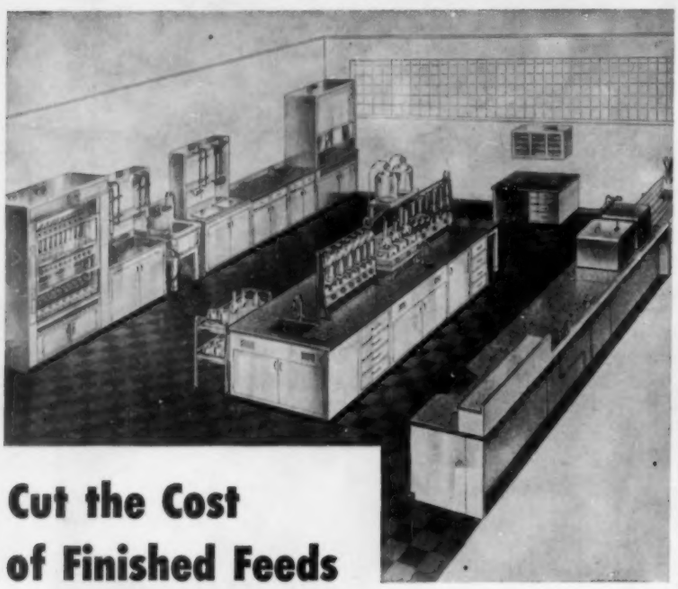

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*According to a noted feed authority as quoted in Nov. 6, 1954, issue of Feedstuffs. Estimate is for average plant, with average safety-factor formulation, using popular feed ingredient analysis chart. Estimated savings will vary as prices of ingredients vary, also will depend on protein content of feed being used.

Feed Costs, Other Factors To Help Boost Milk Output

WASHINGTON—Further increases in milk production are expected in 1959, even though the number of cows will continue to decline and the cost of most production items other than feed will be higher than in 1958, the U.S. Department of Agriculture reports.

Reasons given for the expected production increase this year are "stable dairy prices, the prospect for continued supplies of feeds at slightly lower average prices than in 1958, lower prices for hogs and a lower culling rate than last year, when rising prices stimulated very heavy culling."

The USDA report said prices to farmers for milk and butterfat in 1959 will approximate those of 1958, since price support continues at last year's levels, and supplies of milk products will be large enough to hold prices near support most of the time. "Farmers probably will sell a record quantity of dairy products, and cash receipts are likely to exceed 1958, and approximate the 1957 record of $4.6 billion," according to USDA.

The increase in milk production, however, is not likely to match the gain in population. With higher employment this year, less dairy products may be purchased for price support this marketing year than last.

Production Per Cow

Production of milk per cow first passed the 5,000-lb. level in 1947 and the 6,000-lb. level in 1956. The U.S. average rate has increased more rapidly in recent years than earlier. It rose from 6,162 lb. in 1957 to 6,330 lb. in 1958. As of April 1, the average production per cow in herds of crop correspondents was 4% higher than a year earlier.

The number of milk cows and heifers over two years of age on Jan. 1, was 2.8% lower than a year earlier. This was a smaller reduction than the 3.5% drop from June, 1957, to June, 1958. The total milk output in January, February and March was slightly below a year earlier.

Several factors favor a slightly larger output of milk in 1959. Supplies of feed grains are at record levels, both in total and in relation to the number of livestock to be fed. Costs of dairy rations will average slightly lower this year than in 1958. Because of lower hog prices, milk prices will be considerably more favorable relative to hog prices than in 1958. Cattle prices are expected to be more stable than last year, when they tended upward. The number of farms engaged in producing milk probably will again decline during 1959, but as in other recent years, the average size of herd probably will continue to increase.

Output by Region

Output in each region, as a percentage of the U.S. total, showed little change from the preceding year, as has been the case for several years. But in regions where the increases or decreases have been persistent, their percentages of the U.S. total now are considerably altered from earlier years.

The West North Central states, for example, now produce less than 22% of the national output, compared with over 27% in the early 1930's. The East North Central group approximated a record high in 1958 of 30.1%, compared with between 26 and 28% during the 1930's. Within the past five years the western states have surpassed the south central group in terms of proportion of the U.S. total milk produced. In 1958, western states produced 12.2% of the U.S. total, compared with 11.2% for the South Central group.

Changes in output of milk for individual states provide a greater contrast than the regional totals. Generally, the major dairy producing states have increased the most, both in absolute amounts, and percentagewise during the 1950's. States in which farmers have significant alternative livestock enterprises have shown less of an increase, and in recent years some have shown decreases in response to favorable prices for hogs and beef cattle.

In Wisconsin, which accounted for 14% of the U.S. total milk produced in 1958, output of milk gained 2.7 billion pounds from 1952 to 1958. This was nearly 26% of the total increase for the country as a whole. Other important contributors to the increase in U.S. total of 10 6 billion pounds were Minnesota, 16%; Pennsylvania, 9%, and New York, 8%.

Several indications point to a continued rapid increase in production of milk per animal in the foreseeable future. The nation's demand for milk will be met with progressively fewer milk cows. To some degree, this will mean improved efficiency in production of milk, since there will be fewer animals to maintain.

Concentrate Feeding

Available data which begin with 1945 suggest that the amount of feed concentrates used per 100 lb. of milk produced was essentially stable through 1956, but increased in the past two years. Whether this is true for total feed intake is not known. However, it is known that the quantity of roughages fed per head also has increased substantially, and there have been improvements in quality of roughages.

With the abundant supplies of feed concentrates tending to depress feed prices, the cost of concentrates fed per 100 lb. of milk produced in 1958 was 90¢, the lowest since 1945, despite the slight increase in quantity of feed per 100 lb. of milk produced.

The quantity of concentrates fed per milk cow for the country as a whole exceeded one ton for the first time in 1957, and increased slightly further in 1958. This is about 30% above the mid-1940's. Data by regions on the quantity of concentrates used per cow indicate a much more rapid increase for the West North Central group than for any other region, while the North Atlantic group showed the smallest gain. The avererage for the West North Central group increased 50% from 1944 to 1958, compared with a gain of 22% for the North Atlantic states, and 43% for the U.S. as a whole.

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For example, Beltsville White Turkey poults on a purified diet receiving .55%P of analytical reagent grade of dicalcium phosphate made poor gains and suffered 100% mortality at 3 weeks. Meanwhile, poults receiving the purified diet with .55% of USP grade dicalcium phosphate made an average weight gain of 268.9 grams at 3 weeks, with 100% livability.

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5-59

INTEGRATION

(Continued from page 32)

recommendations made to lamb and mutton producers have been structured entirely from the "production" standpoint, and are overlooking their relationship to the "market" comprising slaughterers, wholesalers-retailers and consumers. (Figure 2.)

For example, much is said about the right time for breeding, lambing and marketing at a time when prices hit their "peak" around Easter. This is fine, except that if all producers follow this advice, the prices will not "peak" during Easter, but may "peak" at another time. Nothing is said about the unloading of lambs on slaughterers during this "peak", and the conspicuous absence of lambs during other periods.

We can see how retailers become less enthusiastic for lambs compared with broiler chickens. Also, most research recommendations usually conclude that dry-lot lamb feeding is unprofitable, while grazing is profitable. These conclusions are rarely, if ever, structured in terms of (a) time periods, (b) input-output ratios using economic data, and (c) total costs for grazing. It is believed also that feed efficiency and rate of gain data could be more widely used among lamb breeding circles.

It is recognized that there are basic differences between sheep and other livestock in breeding periods, feed requirements and consumer acceptance of lamb and mutton. However, it is also suggested that research possibilities for altering and improving these drawbacks in sheep have not been exhausted and, in many cases, have not even been attempted.

Opportunities for Feed Men

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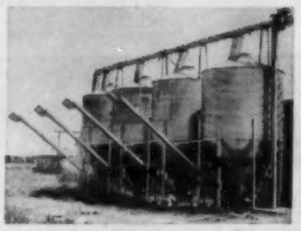

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SELLIN' SAM — By Jim Zilverberg

"I'd feel a lot safer if you'd get the brakes fixed!"

"economic integration." For many years, lambs have been fed-out either by the (a) sheepman himself on his own facilities, or (b) in commercial feedlots either for custom-fed lambs or outright lamb purchases by the feeders. The latter is gaining because of the growing specialization in finishing lambs, thus economic integration develops because the commercial feeder wants to specialize in that while the sheepman wants to specialize in producing up to commercial feeding.

Contracts brjdge this existing gap in specialization. The commercial feeder, however, desires more stable and continuous operations for reasons of economy in his operation and for reasons of market orientation and stability. Since so much variation in the commercial feeders' operations is due to (a) quality of lambs, especially feed efficiency, (b) initial cost of feeder lambs, and (c) price fluctuations, it is reasonable to assume that lamb quality can be improved by better contractual integration whereby different parties to the operation can hope to achieve improvements and be paid accordingly for these improvements. Pingrey and Thomas, in a New Mexico study, reported that variation in feedlot costs per 100 lb. of gain affected profits more so than purchase and/or sale price per unit[1]. Economic integration can help initial cost of feeder lambs also because uncertainty in any firm's operations can be lessened, while price fluctuation problems can be improved too because slaughterers, retailers and consumers can be assured of more steady supplies.

Types of Production

Going back to some production problems, it is seen there are three distinct types of sheep husbandry in the U.S. These may be classified as: (1) The maintenance of farm flocks of a few to several hundred head; (2) the grazing of large bands on open range, and (3) the fattening of range sheep and lambs in the Corn Belt and irrigated sections of the West. In general, there has been a tendency for feeding to take place at some plant other than where the sheep or lambs are raised.

Our great western sheep industry began to experience difficulties after World War II. Increased competition for grazing land, restrictions on forest ranges, shortages of reliable herders and reduced demand and prices for wool worked against the sheepman and led to a drastic reduction in sheep numbers in many western states.

Total U.S. sheep numbers reached a record low level in 1949; however, in recent years there has been a renewed interest in farm flocks, and the increases in sheep on farms since 1950 have about balanced off the reductions in the range area.

The Southeast is showing signs of becoming a more important sheep-raising area. This is due to a general shift from a one-crop system to a soil-building, pasture system of farming. Sheep have been shown to thrive in this area since phenothiazine and lead arsenate came into use for the control of internal parasites.

There are two seasons of heavy runs of lambs on the market. Spring lambs are fattened on milk and grass, and are sold directly off their dams at weaning time. They normally reach the market in greatest numbers from May through July. The largest peak in lamb receipts occurs in August, September and October, when lambs from the range reach the market in greatest numbers. October is generally the month of peak receipts, and February, March and April are the months of lightest receipts.

As a general rule, prices are highest during the months of lighter receipts. Prices usually remain high for the first few spring lambs appearing on the market, and usually hold up fairly well until late June, when the slump begins.

Since April, May and June are normally the highest price months for lambs, the producer should consider breeding his ewes early in those areas where it is possible to lamb early. He should probably creep feed the lambs so as to make full use of lush spring pasture. With such a pro-

[1]H. B. Pingrey and J. W. Thomas, Feeding and Marketing of Feedlot Lambs in New Mexico, New Mexico Ag. Exp. Sta. Bul. No. 409, June, 1956.

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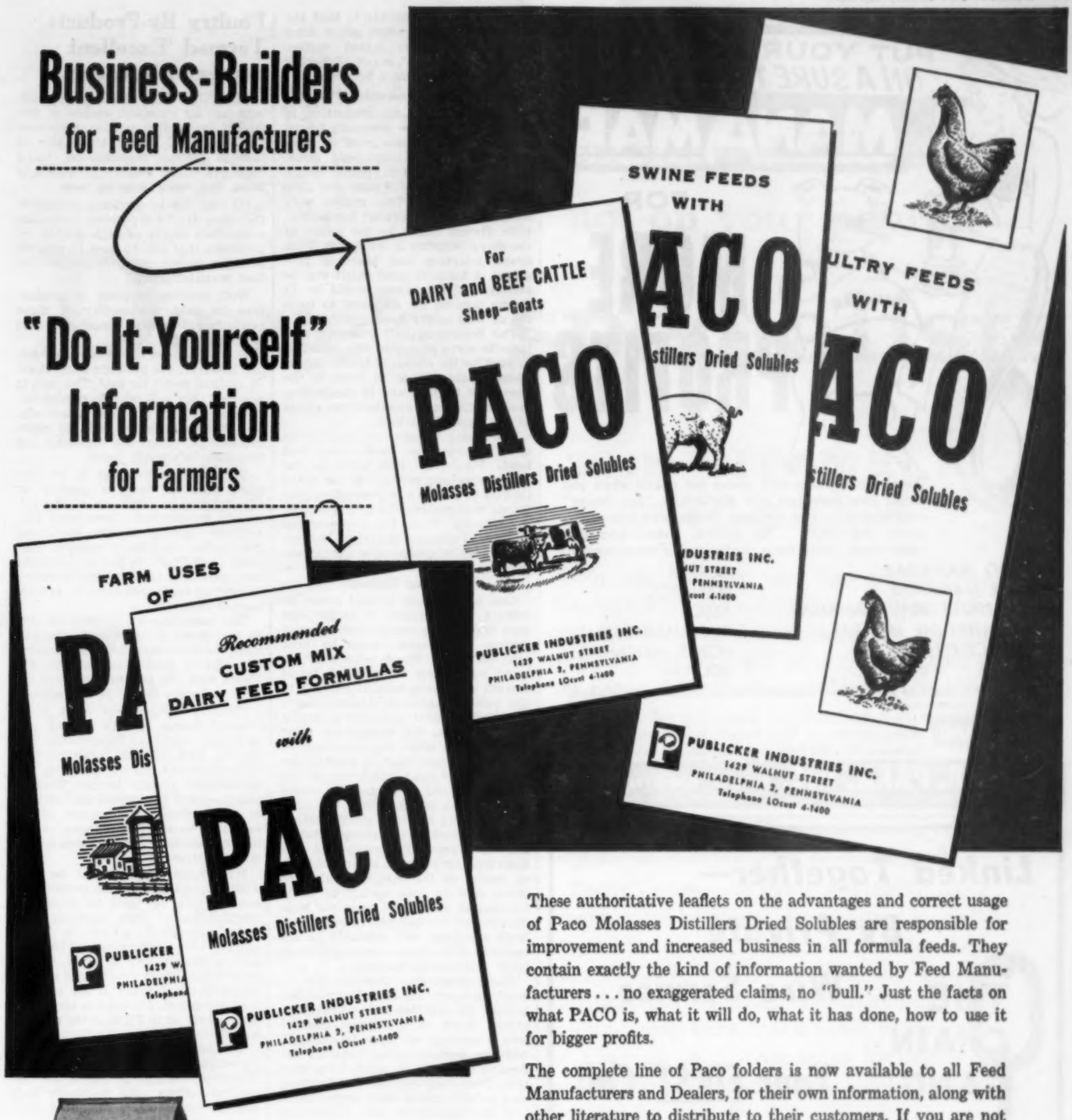

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BROKERS IN FEED INGREDIENTS

gram, it may be possible to beat the price slump which often comes after June. However, as stated earlier, "beating the slump" is not altogether worthwhile nor always accurate.

South's Lamb Production Future

The future for lamb production, in this respect, may be especially bright in the South. Whereas most mutton-type sheep breed only from about September to March, many native ewes in the South will mate any time during the year. This makes very early and "out-of-season" lambs possible. Herein might lie the future of the sheep industry in the South. With sound selection and breeding programs, a lamb of good merit can be produced. Such lambs would be in strong demand for shipment as feeders as well as for feeding locally.

The Southwest will probably continue to serve primarily as a breeding ground for the output of feeder lambs. These lambs will go, in large, to the Corn Belt feedlots and to the feeding areas of Colorado and the other states of the Sugar Beet Belt.

The sheep industry of the U.S. is on a dual-purpose basis—wool and lamb. However, lamb meat is the most important product of the sheep industry today, representing two thirds to three fourths of the income from sheep. Thus, the improvement in lamb production should be the primary goal of progressive sheep producers.

Consumer Demands

One of the most critical needs on today's lamb market is larger loin eyes in our lamb chops. Such superior muscle development must be bred into our sheep. The breeder must do some carcass testing and select toward increasing natural fleshing to the point that lamb chops carry enough lean meat to secure favorable recognition on the self-service meat counter. Too often the consumer of today complains that it would take three or four lamb chops per person to make a good meal once the excess fat had been trimmed off.

Integration has to a certain extent been practiced in the sheep industry for many years. Especially has this been true for contract buying of feeder lambs on the range. Lambs are often sold in late spring or early summer at a specified price per hundredweight for delivery in early fall. Such practices will probably be intensified with future development of large commercial feedlots.

Such commercial feedlots are already in operation in California, Nebraska, the Dakotas and several other states. Some of the larger packers own a number of these feedlots. In addition, packers often contract the feeding of lambs to which they have title. They may contract the finishing on a weight-gain or daily-charge basis.

If the number of farm flocks continues to increase, the trend could give impetus to vertical integration in the sheep industry. Rather than finish out their lambs on the farm, many farm-flock owners may contract them to packers or chain stores for custom finishing in large feedlots. And, independent feedlot operators will be anxious to integrate these smaller producers to keep an even flow of animals going through their yards.

In general, sheep producers should strive to improve economy of production which will enable them to compete more strongly in the market place. Improvement in quality and meatiness of lamb, as well as greater availability in certain areas of the country will help create increased demand. Certain aspects of integration could aid the future of lamb through insuring a more even and uniform flow of economically-produced, meaty lamb into consumer channels. To this extent, the possibilities should be exploited to the fullest.

BUILDS NEW FEED MILL

ANNANDALE, MINN. — The Farmers Elevator Co. here has launched a building program that will provide the firm with a new feed mill.

Poultry By-Products Termed 'Excellent Source of Nutrients'

BILOXI, MISS.—Poultry by-products are an excellent source of nutrients for poultry and swine rations, Dr. Henry L. Fuller, University of Georgia poultry husbandman, told members of the Poultry By-Products Assn. at a recent meeting here.

He told the by-products producers that they are "in a position to provide a constant supply of high quality ingredients that can be used to provide a major source of nutrients for the feed manufacturer."

With modern methods of production, he said, the quality of these products can be kept consistently and uniformly high.

To compete for the feed man's dollar, however, the products must stand "a critical test," he said. The test is whether they will provide needed nutritional factors (a) more effectively, (b) more efficiently, and (c) more economically than the materials the feed man is already using.

Dr. Fuller stated that in its simplest practical form a poultry or swine ration is made up of the following components: Corn (and fat) to provide energy; soybean meal (and methionine) to provide protein; vitamins (and UGF) to provide vitamins and unknown factors, and minerals (including trace minerals) to provide needed minerals.

The materials in parentheses can be considered as "crutches" to supplement the basic ingredients in carrying out their principal functions, Dr. Fuller said. "In general, they are the more expensive items" in the formula.

"Poultry by-products meal is an efficient source of high quality protein with relatively high energy value," he said. "At the same time, it will effectively provide minerals and unidentified growth factors. Thus, it can provide a substantial part of each of the necessary components of the ration in an efficient manner, reducing the necessity for the more expensive 'crutches'."

Hydrolyzed feather meal, he said, when supplemented with methionine, can likewise be used to replace a combination of corn, soybean meal and unidentified growth factor sources very economically. "Its high protein content (85 to 90%), its energy value and its unidentified growth factor activity make it an efficient feed ingredient. Its use has been tested at levels up to 2½% of the ration," he said.

Turning to poultry fat, he said this ingredient has been found to be an "excellent source of added fat for poultry rations with relatively high energy value, when compared with other sources of fat."

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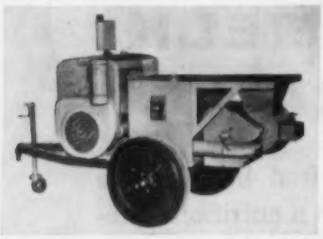
No. 7496—Bulk Handling Unit

Ripco Air Systems, Inc., has introduced its "Ripco Air Caddy" with an over-the-road trailer and hitch. The mobile unit was designed for loading by vacuum and unloading by pressure. The Air Caddy is built to standard truck bed height and can be wheeled into place at the rear of the



truck. Bulk feed and bagged feed can then be fed into the hopper for unloading. With the Caddy-Vac attached flexible hoses can be placed into the truck for unloading and distribution to bins anywhere within reach. The unit enables one man to unload and load carloads of grain in less time than it would take a crew with previous methods, the company stated. For details, check No. 7496 on the coupon and mail.

No. 7497—Corn Sheller Wall Chart

Belle City Manufacturing Co. announces the availability of a full-color wall chart on the company's line of corn shellers. Called "Inside Story on Sheller Profits," the chart contains cutaway views of the interior of Belle City shellers. Construction features are also presented. The shellers feature, company literature explained, channel and angle iron framing, and electric welding throughout. For copies of the wall chart and more information on the firm's advertising program, check No. 7497 on the coupon and mail.

No. 7494—Equipment Catalog

A 40-page, two-color catalog, containing illustrations, specifications and prices of the complete line of

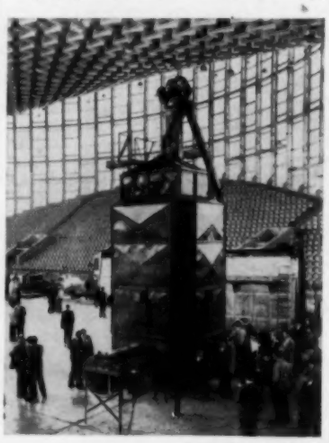
K-line poultry and livestock equipment, is available from Klein Manufacturing Co. The catalog furnishes information on all products manufactured and distributed by the company, including Big Husky hog and turkey feeders, Big Husky hog waterers, creep feeders, K-line square-hole hens' nests and Roll-a-Way sanitary laying nests. For copies of the publication, check No. 7494 on the coupon and mail.

No. 7499—Recirculating Fan

The availability of a self-contained, recirculating fan for ventilation of out-door storage structures has been announced by Sprout, Waldron & Co., Inc. The fan is small and compact, the company stated, and is powered by a 1 h.p. totally enclosed 3450 rpm. motor. A weighed check valve prevents material from being blown out through the fan and into the filter when the storage is being filled. For details, check No. 7499 on the coupon and mail to this publication.

No. 7495—Grain Drier Series

Seven models are included in the Grain Bank Series of grain driers being offered by Aeroglide Corp. The seven models have capacities from 264 bu. to 575 bu. The series are largely prefabricated at the factory,



company literature states, and they require small space, are completely self-contained and require no weather protection or outside shelter of any kind. In field tests the driers have handled lupine, corn, oats, wheat, soybeans, rice, barley, buckwheat, milo, navy beans and tung nuts. They have operated in temperatures above 100° F. and below 0° F. For details, check No. 7495 on the coupon and mail to this publication.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7445—Reprint price list, American Poultry & Hatchery Federation.

No. 7446—Suspended - conveyor weigher, Thayer Scale Corp.

No. 7447—Automatic checkweigher, Toledo Scale Corp.

No. 7448—Bin design booklet, Sprout, Waldron & Co., Inc.

No. 7449—Sodium phosphate bulletin, Monsanto Chemical Co.

No. 7450—Enzyme feed fortifier, Pabst Brewing Co.

No. 7451—Temperature system, Rolfes Electronics Corp., division of Rolfes Grain Aeration Companies.

No. 7452—Equipment leasing study, Foundation for Management Research.

No. 7453—Bag tear strip, Union Bag-Camp Paper Corp.

No. 7454—Bin level indicator, Bin-Dicator Co.

No. 7455—Bulk transport, Dorsey Trailers.

No. 7456—Egg cooler humidifier, Master-Bilt Manufacturing Co.

No. 7457—Pig feeder, Fairfield Engineering & Manufacturing Co.

No. 7458—Poultry catalog, Babcock Poultry Farms, Inc.

No. 7459—Pneumatic handling equipment, Ripco, Inc.

No. 7460—Hydraulic drive mechanism, Sprout, Waldron & Co., Inc.

No. 7461—Packaged feeder, Fuller Co.

No. 7462—Vibration inducer, Martin Engineering Co.

No. 7463—Egg vendor, Tobias Enterprises.

No. 7464 — Overhead roller mill, Automatic Equipment Manufacturing Co.

No. 7465 — Automatic equipment bulletins, Thayer Scale Corp.

No. 7466 — Carbide cutting edge, Gustaf Peterson, Inc.

No. 7467—Equipment catalog, Syntron Co.

No. 7468—Hammermill, J. B. Sedberry, Inc.

No. 7469 — Air vibrator, National Air Vibrator Co.

No. 7470 — Bird repellent light, Trippe Manufacturing Co.

No. 7471—Poultry watering trough, Leach Manufacturing Co.

No. 7472 — Belt conveyor bulletin, Sprout, Waldron & Co., Inc.

No. 7473—One-man hog scales, Precision Equipment Co.

No. 7474—Egg oiling method, Anderson Box Co.

No. 7475—Dust sampler, Day Co.

No. 7476—Retractable top, Productive Acres Manufacturing Co.

No. 7477—Feed fortification, Specifide, Inc.

No. 7478—Bulletins on Eastrone, Eastern Laboratories, Inc.

No. 7479—Power loader, International Harvester Co.

No. 7480 — Testing instrument, Seedburo Equipment Co.

No. 7481—Magnesium bins, Tote Systems, Inc.

No. 7482—Pig parlor cleaner, James Manufacturing Co.

No. 7483—Leasing plan, Nationwide Leasing Co.

No. 7484—Vibratory feeder catalog, Syntron Co.

No. 7485—Enzyme activator literature, Biochemical Corporation of America.

No. 7486—Bulletin on masks, Flexo Products, Inc.

No. 7487—Shipping equipment booklet, K. E. Savage Co.

No. 7488—Broiler test suggestions, Bowman-Martin Development Breeding Farms.

No. 7489—Dual unloading system, Barnard & Leas Manufacturing Co.

No. 7490—Procaine penicillin, Eli Lilly & Co.

No. 7491—21-hole laying nest, Oakes Manufacturing Co.

No. 7492—Wall chart, Burrows Equipment Co.

No. 7493—Pellet cleaning shoe, Sprout, Waldron & Co., Inc.

20% Sales Increase

WEIMAR, TEXAS — M-G, Inc., Weimar, has announced a 20% sales increase for the first six months of this fiscal year. Sales for the six-month period totaled $6,333,400, as compared to $5,222,757 for the same period last year.

The company is made up of a feed division, egg division and poultry division. James H. Harrison, feed division, announced the sales increase. The feed division works with the other divisions.

Send me information on the items marked:

☐ No. 7494—Equipment Catalog
☐ No. 7495—Grain Drier Series
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FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Review Labeling in Advance

The first item to appear in this column when it was introduced was entitled "New Labeling Should be Reviewed in Advance." This was selected by the editor of Feedstuffs out of several submitted. There was no "design" involved in its selection, yet as the weeks and months go by, the advice given then appears to be perhaps the most important and the most needed of all.

Many companies submit ideas and ask for comments early in the formulation of labeling, advertising and promotional policy. Yet the occasional slip-up where a company goes ahead and prints labels and perhaps even contracts for an advertising program based upon terms that have not been cleared in advance continues to lead some into difficulty.

Recently a large company asked for acceptance of a label that had no less than six major items directly in conflict with good labeling practice. This company reported it had a supply of labels and boxes incorporating these unacceptable features that would last for several months. The label was not accepted in many states. Shipments and sales were stopped except for those under old labels and until corrected ones were provided.

Changes in labeling should be anticipated well in advance. Photostatic copies of drawings and sketches of proposed labeling are all that is needed. When an idea begins to "jell" is the time to submit it to control officials. This will avoid serious disruption in the program if a change is required.

Many of the difficulties of this type are in the labeling and distribution of pet foods. Pet food manufacturers should be extremely alert to make certain that new ideas that eventually are reflected in labeling are cleared in advance.

In clearing labels, send a complete copy of the proposed label for review. A letter is not entirely satisfactory unless a facsimile of the whole label is attached. Single points may be checked by telephone, but even this method leaves much to be desired. Often a manufacturer will check one or two points during a telephone conversation and assume the entire label has been cleared. There is no substitute for reviewing the entire label.

Shifting Brands to A Purchasing Company

In the normal development of business one company may purchase another company. The purchasing company may wish eventually to convert all brands to the brand names of the purchasing company. How can this be done?

The following pointers may be of interest in such instances:

1. Most control officials will accept the old brands and the old labeling on bags or containers already printed with no reference to the new company if the new company agrees to be responsible for the products in the bags or containers of the original company.

2. If the purchaser proposes to gradually move from the earlier trade marks and brands and eventually have only its own brands, then it may be done by a procedure such as dropping the old manufacturer's name on the next printing showing the purchaser's name only but still holds the brand name or emblem of the company purchased. As a second step, on the next printing the emblem may be modified by changing color or otherwise shifting and through successive printings eventually drop all reference to the company purchased and its brands and have only the new brand name and the emblem.

3. In the change-over, since each product may remain the same in each instance, it would seem unnecessary to change registrations every time a minor change was made on the label. This could be accomplished by registering only the product itself, such as dicalcium phosphate, and show the name of the purchaser company as the manufacturer and guarantor. An accompanying letter or perhaps information typed on the registration application could show that this is in the process of change and that some of the bags at certain stages will bear the brand name of the company purchased and eventually carry only the brand name of the purchaser.

Have Every Bag Properly Labeled

Occasionally a mixer will have bags of feed, sometimes ingredients, in a warehouse in plain bags. This can lead to confusion and possible mishandling.

It would seem to be sound advice to always have each container properly labeled.

Sometimes feed may cross state lines in plain bags. This is doubly serious as it is in violation of the Federal Food and Drug Act. Dealers and mixers should be especially careful to note that all shipments received are in bags showing the name of the manufacturer, the name of the product, and the net weight on each bag in the case of interstate shipments. Shipments within a state must, in addition, comply with the requirements of individual state laws.

Stone Mountain Offers Railroad Passes

LITHONIA, GA.—An opportunity to view the operations of the Davidson Granite Co. and the Stone Mountain Grit Co. has been made available by the two firms—as passengers on the Atlanta, Stone Mountain and Lithonia Railroad.

The line, which covers 3.5 miles, is a carrier fully licensed by the Interstate Commerce Commission. Upon receiving a written request, the company will send a pass to ride on the railroad.

"The pass will make you a welcome passenger on the A. S. M. & L. any time you visit Lithonia . . . and you can show your friends that you are one of the privileged persons to carry a railroad pass," company officials commented.

CO-OP VOTES FOR MILL

LONE ROCK, IOWA—More than 80% of the stockholders of the Lone Rock Cooperative Elevator voted recently to erect a modern feed mill with a grain bank plan and bulk delivery. It was voted that the type of project and the time of establishing it be left to the discretion of the board of directors.

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Deadly Weed Found Near U.S. in Mexico

UNIVERSITY PARK, N.M.—New Mexico ranchers fear that alfombrilla, or carpet—a deadly plant which now infests about 750,000 acres in Mexico and has killed an estimated 4,000 cattle in the state of Chihuahua—will cross the border into their grazing lands.

Dr. J. J. Norris, animal husbandman, New Mexico State University, recently discovered alfombrilla growing within three miles of the U.S. border south of Antelope Wells, N.M. He said he hasn't found any of the poisonous plants in New Mexico, but it is still possible that they already have crossed the border into the state.

Alfombrilla follows drouth and overgrazing, Dr. Norris said, and New Mexico ranchers are concerned about the prospect of a dry year. He said that new grass seems to be the only effective way found so far to get rid of the weed.

A man who celebrated a little too much one night woke up in the hospital next day, and saw his friend sitting beside his bed.

"What happened?" he asked.

"Well," began his friend, "last night you had quite a load on and went to a window, stepped over the sill, and announced you were going to fly around town."

"And you didn't try to stop me?" cried the injured man.

"To be perfectly frank," his friend replied, "last night I really thought you could do it!"

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Of course money isn't everything —plentiful, for instance.

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Funny, isn't it—how it takes about 20 minutes to introduce the man who needs no introduction.

◆ ◆ ◆

In the championship match of the marble tournament, one little boy missed an easy shot and let slip with a real cuss word.

"George!" called the preacher from the sidelines, "what do little boys who swear when they are playing marbles turn into?"

"Golfers," came the prompt reply.

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Two young fellows were walking down the street one pitch black night. One of the boys had a flashlight with him, and he pointed it upwards and turned on the switch. A brilliant beam of light resulted. He turned to the other boy and said: "I'll give you a dollar if you can climb all the way up that beam."

The second boy hesitated for a minute and then refused. "I know you, Jim," he objected. "I'd get half way up, and you'd flick off the switch."

◆ ◆ ◆

Two cows were grazing alongside a highway down which ran tank trucks of milk on their way to the distributor. On the side of the trucks one could read: "Pasteurized, homogenized, standardized, Vitamin A added." One cow turned to the other and said, "Makes you feel sort of inadequate doesn't it?"

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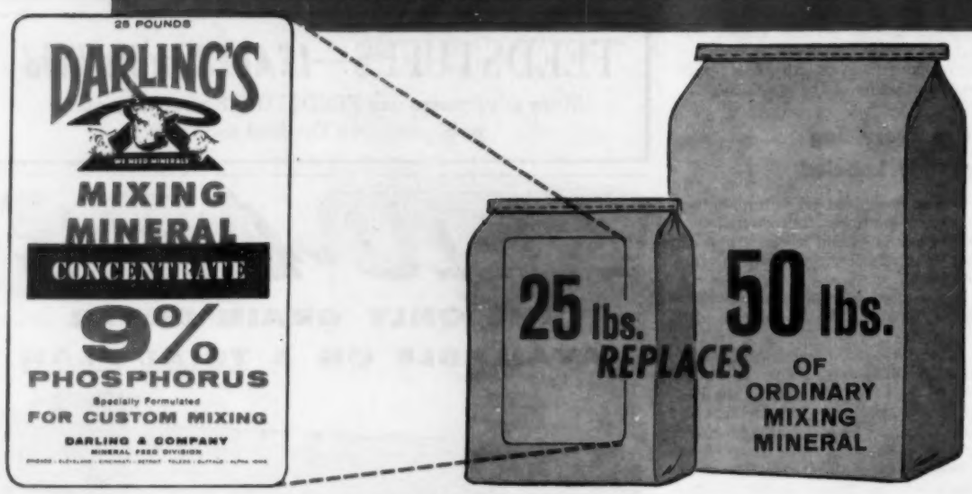

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Tonnage Doubled In One Year With Wirthmore

With a complete line of Wirthmore Feeds and Concentrates to offer, Ward Livingood finds it practical and profitable to handle Wirthmore exclusively.

Friendsville Milling Co.
Friendsville, Maryland

In the year I've been handling Wirthmore Feeds, I have received more consideration and service than during the previous five years when I handled three other lines of feed.

With Wirthmore alone, I am able to serve my customers as well or better than I could with the three other lines. I also avoided additional inconvenience and investment plus three separate inventories.

In one year my tonnage has doubled with Wirthmore.

Ward Livingood

Store Traffic Increased Many Times

Norfolk County
Feed and Seed Store
Portsmouth, Virginia

I consider my Wirthmore dealership a very valuable asset to my business. Since joining Wirthmore, my store traffic has increased many times thereby enabling me to move a good deal more of my allied lines such as seeds, paints and garden supplies.

By expanding our floor space a great deal, we hope to grow right along with a quality product such as Wirthmore.

John T Heath

Likes Wirthmore Quality, Service, Sales and Advertising

Raymond S. Capron, Brooklyn, Pa.

I have found service from Wirthmore plants to be excellent — prompt, efficient and courteous.

Feeds have always reached my place of business in the best of condition, fresh and palatable. This makes repeat business easy to get.

Quality of feed is tops in the field.

Field service of Wirthmore leaves nothing to be desired. I have never had anything like it before!

Wirthmore cannot be topped in sales and advertising support.

The Wirthmore sales and servicemen have been an invaluable help to me in giving me tips on business management, merchandising and trade trends.

Raymond S Capron

Changing to Wirthmore Was The Best Thing We Ever Did

Cortland County Feed
Cortland, New York

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We think they are nice people to do business with and our customers like the feed and Wirthmore service.

Our sales have increased steadily each year since we changed to Wirthmore Feeds.

Norwood and Winnie Bunker

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Convention Calendar

May 18-19—Beef Cattle & Swine Field Days; Oregon State College, Corvallis; W. Dean Frischknecht, Animal Husbandry Specialist.

May 25—Des Moines Feed & Grain Club Field Day; Des Moines Golf and Country Club; ticket chairman, Curtis Twedt, Spencer, Kellogg & Sons, Inc., 119 S.E. 3rd, Des Moines, Iowa.

May 27-28—North Carolina Poultry Field Day; North Carolina State College, Raleigh; chm., Dr. E. W. Glazener, Poultry Department.

June 1-2—Central Retail Feed Assn.; Hotel Schroeder, Milwaukee; sec., Eldon H. Roesler, 1712 W. St. Paul Ave., Milwaukee, Wis.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 8-12—Feed Microscopy Short Course; Missouri College of Agriculture, Columbia, Mo.; sponsored by Missouri College of Agriculture and Missouri State Department of Agriculture; chm., G. M. Barnhart, chief chemist, State Department of Agriculture, Jefferson City, Mo.

June 9—Northeastern Poultry Producers Council Egg Quality and Grading School; University of Massachusetts, Amherst; mgr., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Maurice B. Rowe, Virginia Dept. of Agriculture, 1123 State Office Bldg., Richmond, Va.

June 25-27—Delmarva Chicken Festival, Dover, Del.; Dave Green, 1102 S. State St., Dover, Del.

June 25-27—Canadian Feed Manufacturers Assn.; Bigwin Inn, Lake of Bays, Ontario; N. D. Hogg, Box 66, Station Q, Toronto, Ont.

June 25-27 — Delmarva Chicken Festival; Dover, Delaware; sec., J. Frank Gordy, Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

July 7-8—Poultrymen's Get-Together, Cornell University, Ithaca, N.Y.

July 10-14—Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

July 17-18—New Mexico Grain & Feed Dealers Assn.; Castaneda Hotel, Las Vegas, N.M.; sec., Parley Jensen, P.O. Box 616, Albuquerque, N.M.

July 21-28—American Poultry Congress and Exposition; Kiel Auditorium, St. Louis, Mo.; exec. sec., Don M. Turnbull, American Poultry and Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 3-8—Feed Microscopy Short Course; Texas Agricultural Experiment Station, College Station; chm., E. E. Brown, Asst. State Chemist.

Aug. 4-5—Midsouth Soybean and Grain Shippers Assn.; Hotel Peabody, Memphis, Tenn.; sec., Paul C. Hughes, P.O. Box 692, Blytheville, Ark.

Aug. 4-7 — Poultry Science Assn. (meeting for members and executive committee invited guests only), Iowa State College, Ames; chm., Dr. Robert E. Phillips, poultry department, Iowa State College.

August 7-8—North Carolina Feed

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

June 17-18 — Midwest Bulk Feed Fair; Minnesota State Fairgrounds, St. Paul; chm., R. S. Noller, Butler Mfg. Co., 900 6th Ave. S.E., Minneapolis 14.

Sept. 26—Small Mill Short Course; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 15-16 — West Virginia Feed Dealers Assn. convention; Blackwater Falls Lodge, Davis; sec., J. S. Larrick, Beckley Ice & Feed, Beckley, W. Va.

Nov. 19-20—National Swine Industry Conference; Iowa State College, Ames; chm., Keith Myers, National Swine Growers Council, Grundy Center, Iowa.

1960

Feb. 11—Boston Grain and Flour Exchange Annual Banquet; Sheraton-Plaza Hotel, Boston; chm., Paul Sutliff, 177 Milk St., Boston, Mass.

CALENDAR FOR 1959-60

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Manufacturers Assn.; Ocean Forest Hotel, Myrtle Beach, S.C.; sec.-treas., A. M. Upshaw, Jr., North Carolina Feed Manufacturers Assn., Box 44, Mocksville, N.C.

Aug. 10-12—American Soybean Assn. and National Soybean Processors Assn., joint convention; Sheraton-Jefferson Hotel, St. Louis, Mo.; exec. vice president, George M. Strayer, American Soybean Assn., Hudson, Iowa; sec., National Soybean Processors Assn., R. G. Houghtlin, 3818 Board of Trade Bldg., Chicago 4, Ill.

Aug. 11-12 — Wisconsin Nutrition School; Memorial Union, University of Wisconsin, Madison; chm., Dr. Robert H. Grummer, Dept. of Animal Husbandry, University of Wisconsin.

Aug. 17-18—Kentucky Feed Conference, sponsored by University of Kentucky and Kentucky Feed & Grain Assn.; Brown Suburban Hotel, Louisville; sec., Jack Weber, P.O. Box 425, Lexington, Ky.

Aug. 23-25—Poultry Industries of Louisiana, Inc.; Captain Shreve and Washington Youree Hotels, Shreveport; sec., Clyde Ingram, Louisiana State University, Baton Rouge, La.

Aug. 23-25 — The National Hay Assn.; Sir Francis Drake Hotel, San Francisco; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center; Eatonton, Ga.; chm., Arthur Gannon, Poultry Division, University of Georgia, College of Agriculture, Athens, Ga.

Sept. 9-10 — Pet Food Institute, Drake Hotel, Chicago; sec., Clyde Kassens, 3325 Michigan Ave., Chicago, Ill.

Sept. 9-10 — Maryland Poultry Service Conference; University of Maryland, College Park; chm., Wade H. Rice, University of Maryland, College Park, Md.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. vice pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.

Sept. 16-18—National Feed Ingredients Assn.; Pick-Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.

Sept. 17-18 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry.

Sept. 18—College-Feed Industry Conference; Iowa State College, Ames; chm., Prof. Emmit Haynes, Animal Husbandry Dept.

Sept. 23 — Vermont Feed Dealers and Manufacturers Assn.; University of Vermont, Burlington, Vt.; sec., D. C. Henderson, Hills Agricultural Science Building, Burlington, Vt.

Sept. 23-25 — Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc., pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 26—Small Mill Short Course; Continental Hotel, Kansas City; sec., Lloyd Larson, 20 W. 9th Street Bldg., Kansas City 5, Mo.

Oct. 6-8 — Northeastern Poultry Producers Exposition; Farm Show Building, Harrisburg, Pa.; sec., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 7-9—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 11-14—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Cumberland Falls State Park, Corbin; sec., John W. Tuttle, 730 Rose St., Lexington, Ky.

Oct. 14 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 14-15—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington, Ky.

Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 22-23 — Annual Stockholders Meeting, Cooperative G.L.F. Exchange, Inc., Onondago County War Memorial Building, Syracuse, N.Y.

Oct. 30—Illinois Sheep Producers Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Department of Animal Science.

Nov. 4-7 — National Renderers Assn., Hollywood Beach Hotel, Hollywood Beach, Fla.; sec., Miss Jamie Fox, 30 N. La Salle St., Chicago 2, Illinois.

Nov. 6-7—Oklahoma Formula Feed Conference; Oklahoma State University, Stillwater; chm., Dr. Rollin H. Thayer, Poultry Science Department.

Nov. 12-13—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. F. W. Hill, Poultry Husbandry Dept., Cornell University, Ithaca, N.Y.

Nov. 17-18—Arizona Grain & Seed Association; Hotel Westward Ho, Phoenix; sec., Hayden C. Hayden, Hayden Flour Mills, Box 156, Temple, Ariz.

Nov. 30-Dec. 1—Midwest Veterinary Nutrition Conference; President Hotel, Kansas City; sec., Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th Street Bldg., Kansas City 5, Mo.

Dec. 8-9—Poultrymen's Service Clinic; Cornell University, Ithaca, N.Y.

1960

Jan. 4-5 — Kansas Formula Feed Conference; Kansas State University, Manhattan, Kansas.

Jan. 25-27 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford,

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RESEARCH AWARD—Dr. Hadleigh Marsh (left), veterinary pathologist at Montana State University, receives the Animal Health Institute's Distinguished Service Research Award from U.S. Sen. Stuart Symington of Missouri. Also shown is True Davis (center), Anchor Serum Co., St. Joseph, Mo., outgoing president of AHI. The award was made during the 19th annual meeting of the AHI in Washington recently. Dr. Marsh's career of research on livestock diseases spans a half century. He has authored almost 100 scientific papers.

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BULLETIN G-579 — Describes the DAY Type "R" filter. An all purpose, versatile unit. Bulletin gives operating features, dimensions and specifications.

BULLETIN 573 — Dual-Clone dust separators — noted for their low resistance and high cleaning efficiency. Easy to install, no maintenance, no moving parts.

BULLETIN 576 — "HV" heavy duty dust separator. Rugged construction and lower initial cost than many light gauge galvanized type cyclones.

BULLETIN F-75 — Reverse Jet Dust Filter Facts. Complete with specifications, typical equipment layouts, capacity and performance tables for DAY type "AC" filter.

BULLETIN R-578 — Gives complete information about Style "A" rotary valves. Construction features, specifications, dimensions and applications.

"SCHLITZ DEFEATS DUST" — FOOD ENGINEERING magazine reprint describes all out dust control for 3½ million bushel Schlitz grain elevator. Request Bulletin "Schlitz Defeats Dust."

"EFFICIENT DUST SNATCHERS" — Bulletin describes DAY's part in providing maximum safety and good housekeeping for starch packing building of large food processor.

BULLETIN 510 — DAY Unit Dust Collectors. Complete, low cost unit designed for plants or applications where central dust control systems are not practical.

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Feb. 4-5—Oregon Animal Industry Conference; Oregon State College, Corvallis, Ore.; chm., Dr. J. E. Parker, Poultry Husbandry Department.

Feb. 12-14—Fact Finding Conference, sponsored by the Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 59 East Madison, Chicago, Ill.

Feb. 21-23—Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., G. E. O'Brien, 694 N. Ohio Street, Greenville, Ohio.

Feb. 22-23—Virginia Feed & Nutrition Conference; Hotel Roanoke, Roanoke; J. Paul Williams, sec., Virginia State Feed Assn., 615 E. Franklin St., Richmond, Va., or Prof. Paul M. Reaves, Department of Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

March 7-8—Grain & Feed Dealers National Assn.; Hotel Muehlebach, Kansas City; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 23—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

AACC to Encourage More Feed Chemists To Join Association

WASHINGTON — The American Association of Cereal Chemists will make an effort to include more feed chemists in the association membership, according to Clinton L. Brooke, enrichment products manager of Merck & Co., and immediate past association president.

Opening the association's 44th annual meeting this week in Washington, Mr. Brooke said, "The AACC must broaden its scope, for many cereal chemists have interests in fields other than in milling and baking."

He said potential members include chemists in the laboratories of manufacturers of feed and feed supplements, in state feed control laboratories, in government laboratories and in commercial laboratories concerned with feed analysis.

The AACC directors are planning to form a new committee to deal with feed industry problems, Prof. John Johnson, Kansas State University, president-elect of the group, announced. He said the committee will be composed of feed analysts and chemists, and names will be announced soon.

The feed chemists will also be given board representation, and a new director will be named shortly by Del Pratt, the Pillsbury Co., who assumed the presidency of AACC on May 7.

Mr. Brooke stated that a full-day session will be devoted to animal feed at the annual meeting of AACC in Chicago next year.

TURKEY FIRM INSTALLS MILL

SHAWNEE, OKLA.—A new feed mill which manufactures push-button formulations for turkeys has been installed at the River Rest turkey farm near Shawnee. The mill is housed in an 18 by 46-ft. structure, Roy Ferguson, Jr., head of the River Rest industries, said the firm can vary the formula according to age, sex and variety.

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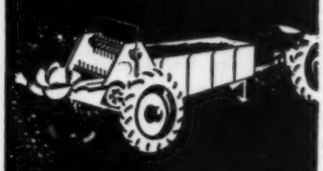

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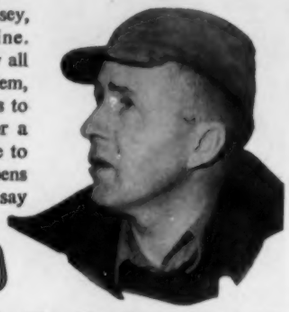

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Cattle Gain Faster on Pellets, Wafers; Cost of Gain the Same, Tests Show

By ROBERT H. BIRDSALL
Oregon State College

ONTARIO, ORE. — Few feeding practices have swept the country with the impact of hay pelleting and wafering—with a critical question yet to be answered. Does it pay?

Recent trials by Oregon State College animal scientists give a partial answer for beef cattle feeders. Hay pellets and wafers gave faster gains than chopped hay, but costs per pound of gain were about equal.

Results of the 136-day feeding trial were reported recently to some 250 ranchers, feed company representatives and other agricultural leaders at OSC's annual spring Feeders' Day at the Malheur branch experiment station in eastern Oregon.

Forty eight long yearling steers, divided into six test lots, went on feed trials last November to compare alfalfa wafers 4 in. in diameter, ⅞ in. pellets, and chopped alfalfa. Each form of roughage was supplemented with a grain mix making up 40% of the ration.

"Complete" Pellets

Wafers and pellets were also tested in "complete" form containing 40% grain mix as a comparison against loose-fed grain. Grain mix had equal parts of ground ear corn, ground barley, and dried beet pulp. One lot of steers on chopped alfalfa received ground ear corn instead of the grain mixture.

While steers made best gains on pelleted or wafered hay, added gains were offset by higher processing costs for these popular forms of compressed hay. Neil Hoffman, station superintendent, explained that neither storage nor handling cost comparisons were considered in the experiments.

Average daily gains were about equal for pellets or wafers, ranging from 2.7 lb. gain per day for hay wafers and loose grain to 2.8 lb. for hay pellets and loose grain. Complete wafers and pellets gave 2.72 and 2.78 lb. daily gain, respectively.

Steers on chopped hay plus loose grain mix gained an average of 2.47 lb. daily, and animals on chopped hay plus ground ear corn made average daily gains of 2.55 lb.

Chopped hay and corn edged out other combinations for cheapest gains per pound of feed, averaging only 16.1¢ cost for each pound gained. Highest feed cost was for complete pellets, averaging 19.6¢ for each pound gained.

Other costs per pound of gain were: Chopped hay and grain mix, 16.7¢; wafers and grain mix, 16.9¢; pellets and grain mix, 17.3¢, and complete wafers, 17.8¢.

Total feed requirements for 100 lb. gain ranged from 1,025 lb. of pellets and loose grain mix up to 1,114 lb. of chopped alfalfa and loose grain mix.

Animals went on feed at around 865 lb. average and came off at 1,200-1,250 lb. Liveweight grades at the end of the feed period showed little variation among lots with animals ranging from "high good" to "choice." Steers were implanted with 30 mg. stilbestrol before going on feed.

Hay used for all forms of roughage was from the same field, and Hereford test animals were from the same line at OSC's Squaw Butte-Harney rangeland branch experiment station near Burns, Ore.

Pelleting Grass Hay

Exceptionally high-quality alfalfa used in the experiments may have "masked" one of the major advantages of pelleting, researchers said. Experiments have shown that pelleting generally benefits grass hay more than legume hays.

Trials now underway at OSC's Squaw Butte-Harney station, for example, are showing marked advantages to pelleting wild meadow hay grown throughout the West on high-elevation flood meadows.

Dr. Farris Hubbert, animal scientist at the Squaw Butte station, reviewed the first 70 days of the grass-pellet trials. Wintering feed costs per pound of gain for yearling steers were cut nearly in half with pelleted hay compared with chopped hay. Protein supplement with the chopped hay increased daily gains, but still fell short of straight hay pellets.

Dr. Hubbert said the limited and preliminary findings indicate how pelleting of bulky hay increases feed intake and gives faster gains. Each test lot consisted of only three animals, and plans are to further test these initial findings. Meadow hay for the trials was rated at $20 a ton chopped and $30 pelleted.

Chopped meadow hay consumption averaged 9.25 lb. daily. Daily gains for this lot averaged only .34 lb. at a feed cost of 27.1¢ per lb. of gain. Pelleted meadow hay consumption averaged 13.6 lb. daily. Daily gains averaged 1.41 lb. at a feed cost of only 14.5¢ lb. of gain.

Supplemented chopped meadow hay consumption averaged 9.45 lb. daily. Daily gains averaged 1.27 lb. at a feed cost of 14.9¢ lb. of gain. Supplement consisted of 2 lb. barley and 1 lb. cottonseed meal daily.

Dr. J. E. Oldfield, OSC animal scientist, says tests to date give no clear-cut formula on when it pays to feed pellets or wafers, since local costs and feeding conditions will dictate the decision. Well-known advantages of pellets and wafers include less bulk, ease of handling, and the fact that animals will eat more.

Dr. Oldfield also points out that pelleting can increase use of low-quality feeds by combining them with more palatable and nutritious supplements. Animals can't sort out ration ingredients, but receive the complete diet intended for them.

Disadvantages of pellets and wafers include higher costs, difficulty in judging quality of hay that had been used in the process, and the fact that pellets and wafers require more protection in storage than baled or loose hay.

Bag Company President

DES MOINES, IOWA — Harry Pomerantz was elected president and secretary of the Midwest Burlap & Bag Co., Des Moines, at a recent meeting of the firm's board of directors. Marvin Pomerantz was elected vice president and treasurer.

The company manufactures burlap, cotton and multiwall paper bags, and also does reprocessing. The company has a new plant occupying 132,000 sq. ft.

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Commodity-Feed Price Ratio Dip Reported by USDA

WASHINGTON—With few exceptions, farm commodity-feed price ratios at the mid-April point were lower than those recorded the month before, according to the U.S. Department of Agriculture. These drops, reflecting price declines for certain farm products, widened the gaps between April's ratios and their higher corresponding long-term averages and ratios for the same month a year earlier.

The USDA's crop reporting board announced that during the month ended April 15 the index of prices received by farmers remained unchanged at 244% of its 1910-14 average, with lower egg and milk prices approximately offset by higher prices for beef cattle, corn and cotton.

One of the most important developments in the agricultural price picture during the latest reporting period was in poultry and eggs. As egg prices dropped sharply and the cost of poultry rations climbed slightly, the egg-feed price ratio dropped to 8.2, which, with the exception of April, 1937, is the lowest April ratio since records were started in 1924. The 10-year average egg-feed ratio for April is 9.9, the same ratio recorded for March of this year.

The poultry and egg price index dropped 12% during the month ended April 15, and at 135% of its 1910-14 average was at its lowest level since May, 1942. Egg prices broke sharply and at mid-April averaged 28.1¢ doz., nationally, down nearly 18% from a month earlier and the lowest since June, 1944.

Meat Index Up

Higher prices than a month earlier for most species of meat animals raised the meat animal price index for mid-April 3% to 336. In spite of increased marketings, mid-April prices of beef cattle, bolstered by a stronger market for slaughter, feeder and stocker cattle, averaged the highest since August, 1952. Hog prices, on the other hand, although up from February and March, were below January. And, except for 1956, hog prices were the lowest for the month since 1946.

The April hog-corn ratio stood at 13.8, compared to March when it took 14.5 bu. corn to equal, in value, 100 lb. live hog. The April ratio remained above the 1948-57 average of 13.4, but was well below the April, 1958 ratio of 18.

The April broiler and farm chicken-feed ratios were both at 3.3. A month earlier the broiler ratio was 3.5, and a year earlier it was 3.9.

USDA reported that prices received by farmers for milk sold wholesale continued to decline seasonally as production increased.

Prices paid by farmers for feeder and replacement livestock moved higher in mid-April with prices of feeder and stocker cattle up 90¢ cwt. from mid-March.

USDA said the mid-April livestock feed price index, at 203, was 1% above the March 15 index. Most of this increase came from a sharp increase in the price of corn. Oat prices also were up, while barley prices declined slightly. Wheat millfeeds and poultry feeds, with the exception of turkey growing mash, were up seasonally. High protein feeds were generally lower, but this decline was more than balanced by higher prices paid for beef cattle concentrate and mixed hog feed. The feed index was 1½% higher than a year earlier.

Farm Commodity-Feed Price Ratios

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
April, 1959	3.3	3.4	4.2	3.7	3.5	3.2	3.1	3.1	3.9	3.4
March, 1959	3.9	3.8	4.3	4.1	3.4	3.8	3.9	3.6	3.9	3.0
April, 1958	4.8	4.9	5.2	5.0	4.5	4.6	4.4	4.2	4.4	4.1
Average (1948-57)	5.7									
Average (April, 1948-57)	6.1									
Broilers:										
April, 1959	3.3	3.4	4.2	3.7	3.5	3.2	3.1	3.1	3.9	3.4
March, 1959	3.5	3.6	4.4	3.9	3.7	3.5	3.4	3.4	3.9	3.7
April, 1958	3.9	4.1	4.7	4.3	4.0	3.7	3.8	3.9	4.5	4.1
TURKEY-FEED—										
April, 1959	6.7	6.6	8.1	6.6	7.0	5.8	7.3	6.1	7.0	6.2
March, 1959	6.9	7.0	8.3	7.1	7.8	6.3	7.3	6.4	7.3	5.8
April, 1958	7.6	8.0	8.5	8.2	8.7	7.2	6.9	6.4	..	6.4
Average (1948-57)	8.6									
Average (April, 1948-57)	8.7									
EGG-FEED—										
April, 1959	8.2	10.0	8.8	7.8	7.4	9.1	9.0	8.1	8.7	7.7
March, 1959	9.9	10.3	10.6	9.8	9.9	10.1	10.4	9.6	10.0	9.3
April, 1958	10.8	11.8	11.6	10.9	10.9	10.6	10.3	10.5	10.4	9.8
Average (1948-57)	11.1									
Average (April, 1948-57)	9.9									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
April, 1959	1.29	1.22	1.23	1.38	1.57	1.37	1.33
March, 1959	1.37	1.33	1.29	1.45	1.64	1.50	1.38
April, 1958	1.32	1.23	1.25	1.44	1.53	1.40	1.36
Average (1948-57)	1.29						
Average (April, 1948-57)	1.17						
BUTTERFAT-FEED—							
April, 1959	24.1	...	19.4	26.6	...	15.9	18.6
March, 1959	23.9	...	19.4	27.0	...	16.3	18.5
April, 1958	23.8	...	19.6	26.3	...	15.5	19.1
Average (1948-57)	22.0						
Average (April, 1948-57)	21.4						

	U.S.	North Cent.
HOG-CORN—		
April, 1959	13.8	14.2
March, 1959	14.5	15.1
April, 1958	18.0	18.8
Average (1948-57)	13.4	13.7
Average (April, 1948-57)	12.9	13.3

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISION

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

South Central: Combination of the two above.

Pacific: Washington, Oregon, California.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana.

West: Combination of the two above.

Robert Schafer Joins Longstreet-Abbott

ST. LOUIS — Robert Schafer has resigned as vice president and manager of Red Comb-Pioneer Mills at Lexington, Ky., to join the commodity counseling firm of Longstreet-Abbott & Co., St. Louis.

Robert Schafer

In his new post Mr. Schafer will specialize in the field of inventory control and raw material procurement programs for milling, baking and feed industries served by the company.

Prior to setting up the Lexington mill in 1951, Mr. Schafer was assistant purchasing director of Red Comb's parent company, Hales & Hunter Co., Chicago. Previously he had been purchasing economist for the Pillsbury Co., Minneapolis, and General Baking, New York.

He is a graduate of Harvard College and Harvard Business School, and did graduate work at Kansas State University.

Contracts Expand Georgia Egg Market

ATHENS, GA.—Expansion in the commercial egg market in Georgia is taking place rapidly in areas where financing, promotion and egg contracts are being offered, specialists at the University of Georgia here have reported.

The expansion is not the same in all areas of the state, but it is greatest where the financing and promotion are available, they said. It has been estimated that a fourth of the commercial hens are under some kind of contract or financing plan.

The financing plan varies. Some contractors guarantee the poultryman about $1 per hen each year, but other types of financing are used as well. Under one contract, the feed company furnishes pullets ready to lay and pays the poultryman 2¢ a bird a week, and another contract pays 5¢ doz. eggs. Some contracts pay 6¢ and above.

Contracts operate on a basis of the dealer furnishing pullets, feed and vaccines, and the poultryman furnishing the house, equipment, litter and work.

As the egg business continues to expand in the state, it is believed that more transitions may be ahead.

More Western Swine Production Seen

SAN FRANCISCO—Meat packers in the Rocky Mountain and Pacific Coast states will be less dependent on Midwest corn-fed hogs in future years if westbound freight rates are not restored to their former relationship, according to E. Floyd Forbes, president of the Western States Meat Packers Assn., Inc.

Under present freight rate conditions, dressed pork and packinghouse products from the Corn Belt can be shipped westbound cheaper than the live animals. Mr. Forbes says he believes that if the situation is not speedily corrected the West will soon commence to produce its own pork supply.

The WSMPA president pointed out that the "pig parlor" idea is growing in the West. Pigs raised in "pig parlors" will be meat-type hogs, ready for market at specified weights every week in the year, he pointed out, and added that grains available in the West, particularly barley, can be utilized to produce high-quality pork.

POULTRY FIRMS CHARTERED

BATON ROUGE, LA.—Included among the charters of incorporation filed during April at the office of the secretary of state here were the Hammond (La.) Poultry & Egg Co. with capitalization of $20,000 and the Bayou Rapides Poultry Ranch, Inc., Alexandria, with capitalization of $100,000.

New Arkansas Egg Law Aims at Firm Quality Standards

LITTLE ROCK, ARK. — A broad new retail egg law, the Egg Marketing Act 94, passed by the general assembly and signed into law recently by Gov. Orval Faubus, will go into effect in Arkansas July 1.

The law, which replaces the old egg labeling law approved in 1955, is aimed at establishing firm standards for commercial egg producers who recognize quality requirements and produce for the graded market.

To be financed by an inspection fee of one fourth cent per carton, the new act eliminates the old license fees. The fees will be collected on eggs moving at retail levels only.

The new law is also aimed at simplifying restrictions on egg dealers at the wholesale levels—feed stores, country merchants, produce dealers and others who buy and re-sell on the wholesale market.

Although it has no restrictions on egg wholesalers, the act will clamp down on the sale of poor-quality eggs.

All eggs sold at retail must be graded, with the grade stamped plainly on the container, and all eggs must be packaged in cartons, paper bags or some other type of a closed container.

The one fourth cent inspection fee stamp will be affixed to the container. The livestock sanitary board, in charge of enforcement and administration of the new requirements, will sell the stamps.

Agricultural officials said that while the act does not create a barrier on the interstate movement of eggs, all eggs shipped into Arkansas must meet its provisions. They believe the law will eliminate dumping of outside eggs and misleading advertising.

The law also has another meaning for the producer of quality eggs. Officials think it will raise "substantially" the quality of all eggs at retail levels by prohibiting the sale of dirty and junk eggs.

Officials say also that the act will not hurt the small egg producer—the farmer with something like 300 to 400 commercial hens. The livestock sanitary board will issue free permits to small producers who sell only eggs from their flocks at their own farms.

The act will not affect the established practice of bartering of eggs for groceries or feed in country areas. Producers and merchants may continue this practice under the new law, but if the merchant sells the eggs at retail he must grade, package and affix stamps to the egg containers.

Main intent of the law is to build a program of top-quality graded eggs for the state, officials said. Agricultural officials feel that this is the only way the state can establish a "reputation" as the producer of quality eggs.

New Moisture Charts

CHICAGO — Seedburo Equipment Co., Chicago, announced recently that it will have available new moisture conversion charts for the Tag-Heppenstall Moisture meter for corn and soft red winter wheat (white wheat winter production). The revised grain chart becomes effective Oct. 1, 1959, and the revised wheat chart on June 15, 1959.

STRAWBERRY QUEEN—Linda Eady, queen of the recent Strawberry Festival at Plant City, Fla., is shown visiting the exhibit booth of Coronet Phosphate Co., Norfolk, Va. Many prehistoric fossils recovered from Coronet's mines were on exhibit.

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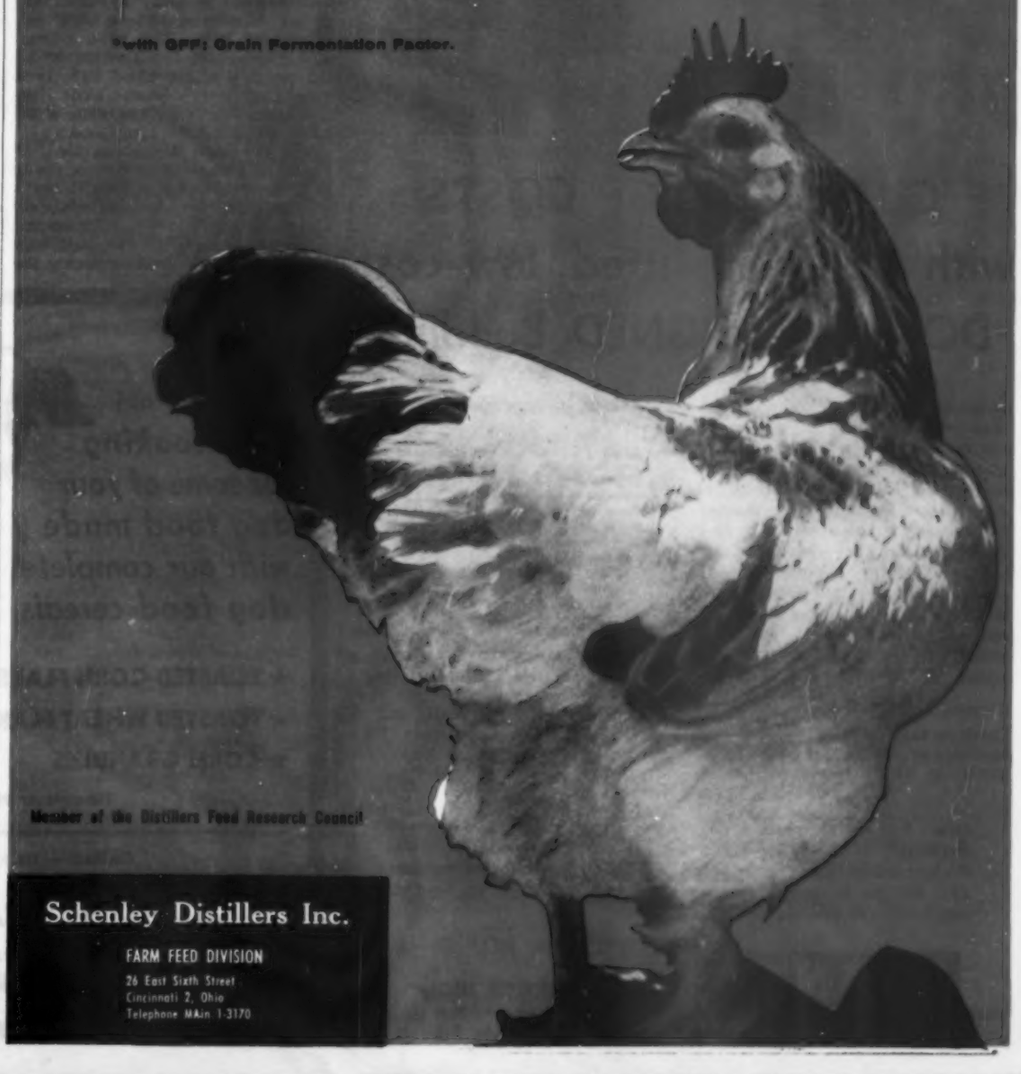

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INQUIRIES APPRECIATED

Texas Researcher Reviews Findings In Aplastic Anemia Syndrome Studies

COLLEGE STATION, TEXAS—A review of findings in the study of aplastic anemia in chickens was presented by Dr. A. A. Camp, superintendent of the Gonzales, Texas, substation of the Texas Agricultural Experiment Station, in a recent issue of the Texas Feed Service Report, quarterly publication of the experiment station.

A disease which has been a problem in Texas and other areas in recent years, aplastic anemia can be treated successfully, Dr. Camp said, but its cause is unknown. In his report, Dr. Camp discussed some of the factors which may contribute to the development of the disease.

He pointed out that the problem of poultry diseases is a continuous one. "About the time a satisfactory prevention or treatment is developed for an existing disease, another occurs, and the fight against loss continues," he said.

Aplastic anemia, which was recognized only within the past decade, is an example of this. Following is Dr. Camp's report on the disease:

Condition Recognized

A new condition was recognized in broiler birds in 1951. It was called the hemorrhagic-anemia disease because small hemorrhages could be found in practically every organ in the body of affected birds and in most instances the birds were anemic. The condition was further characterized by morbidity, gastro-enteritis and an aplastic condition of the bone marrow. Symptoms varied from a very acute to a chronic form.

Aplastic anemia is the term now applied to this disease by some people since the occurrence of the hemorrhages is not as prevalent today as formerly, and anemia is now the more consistent symptom. Hematocrit values obtained recently indicate that anemic birds may have a blood cell volume of 20 to 50% of a normal bird. Hemoglobin levels as low as 1.5 gm. per 100 ml. of blood have been noted in extremely anemic birds. Normal birds usually have a range of 7.5 to 9.8 gm. per 100 ml. of blood.

The condition is seen in birds of almost any age—in chicks as young as 10 days of age and in hens 31 weeks of age. However, in approximately two thirds of the cases of the anemic condition brought in the pathology laboratory on the station during the past two years, the birds have been 4 to 8 weeks old. In approximately 37% of all cases reported to the laboratory in 1958, the birds were 6 to 7 weeks of age. For the past several years, the condition occurred most frequently when the birds were about 6 weeks of age.

Some 155 groups of birds, from 3 to 31 weeks of age, were submitted to the laboratory during 1958 and were diagnosed as having the aplastic anemia condition. These birds came from flocks representing more than 800,000 birds. This number probably represents not more than 20% of the total birds affected in this area alone because many producers and servicemen have seen the condition so often that they can recognize it immediately and initiate treatment without consulting a poultry pathologist.

Mortality Light

Mortality of birds affected with the anemic condition usually is not great. The greatest loss is from poorer feed conversion, lowered market quality, cost of medication and stress of the condition often precipitates other diseases which may result in heavy medication bills and heavy death losses.

The cause of the disease still is unknown. Vitamin K deficiency was suspected at first, but the condition has been noted often in birds receiving a diet thought to contain many times the chick's requirement for this vitamin. Attempts to cure the condition with high levels of added vitamin K have failed. Therefore, it appears unlikely that a shortage of this vitamin is the cause of the condition.

Birds receiving feeds which produce extremely fast growth rate are more prone to develop anemia. The condition is seen most often in the fastest growing birds, whether they are receiving a top-notch or a mediocre-type feed. This might suggest that the condition is caused by one or more factors synthesized within the body of the birds. One such factor is vitamin C which is synthesized mainly in the liver. This vitamin seems to be a "suspect" since it is necessary for the maturation of red blood cells, the absorption and utilization of dietary iron and the maintenance of normal blood hemoglobin levels.

Blood from birds affected with aplastic anemia has an abnormally large number of immature red blood

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cells which, as previously stated, contain an unusually low hemoglobin level. To partially substantiate the vitamin C deficiency in anemic birds, laboratory analysis data were obtained by A. A. Camp and H. O. Wheeler which showed that the vitamin C content of the blood plasma and liver of affected birds is approximately 70% that of normal birds. Investigations are in progress to further study this possibility.

Another material known to precipitate or antagonize the anemia, or both, is sulfaquinoxaline, especially when fed at the therapeutic level for coccidiosis. The exact reason why sulfaquinoxaline causes this effect is not known, but it may be related to impaired tissue synthesis of certain factors necessary for the normal growth and health of the bird.

Another factor which may contribute to the development of the condition is the change in the normal micro-organism balance in the intestinal tract of the chicken. This fact is mentioned because several workers have noted that birds affected with the aplastic anemia condition often have an abnormally high population of molds and fungi in the intestinal tract. This is of extreme interest since it has been noted that the feeding of materials which either stimulate growth of intestinal bacteria or reduce the mold or fungus population, or both, appears to help alleviate the condition. Camp and Wheeler obtained data showing that the mold and fungus count of birds which appeared normal was 1,300 per gram of feces. Birds showing typical anemia symptoms taken from the same house, of the same sex and receiving the same feed as those which appeared normal, had 1,300,000 molds and fungi per gram of feces.

Successful Treatment

A satisfactory prevention for the disease has not been obtained. It can be treated successfully, in most cases, with a high level of trace minerals fed in combination with approximately 100 lb. per ton of cod fish liver solubles or condensed fish solubles. In some cases, the trace mineral supplement alone will suffice. In others, the fish products alone have proved successful. In still other cases, a combination of the two is required for complete recovery.

The length of the treatment period required for full recovery may vary from five days to two weeks, depending on the severity of the condition when therapy is initiated and the presence of other diseases. If the birds are affected with either a respiratory disease or severe enteritis, a suitable medication should be included along with the treatment for the aplastic anemia condition.

The aplastic anemia condition has been a thorn in the poultry producer's side for several years and has cost the industry millions of dollars. A series of conferences have been held by several of the leading veterinarians of the Texas A&M College system in an effort to establish methods and procedures which may lead to the eradication of this "costly disease."

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Broiler Comfort

"If broiler producers expect to stay in business, they must begin to think in terms of better housing and more efficient brooding systems."

That's the advice of the University of Georgia Extension Service.

Added to this statement was the "basic rule of brooding": "Keep chicks comfortable!"

Milton Y. Dendy, Georgia extension poultryman, noted that in many Georgia broiler houses it is not possible to maintain a minimum temperature of 55-60° in extreme weather. "This results in high fuel costs, poor feed conversions and lower quality in the finished broiler," he said. "If broiler prices remain at present levels, economics will force dealers to require producers to provide better housing and more efficient brooding systems."

Mr. Dendy asked, "What would it have meant if a broiler producer had built a house where he could maintain a room temperature of not less than 55-60°, either by use of a central heating system, supplementary heat, tighter walls and roof or controlled ventilation?"

Supposing that such improvements were made and they resulted in an extra one half pound of meat per 100 lb. feed, Mr. Dendy illustrated his point with this example:

"Take a broiler grower with 20,000 capacity who averages a 2.25 feed conversion, a 3¼ lb. bird and grows four broods a year. With one half pound more meat for every 100 lb. feed, that figures out to 730 lb. more meat per brood, or 2,920 lb. a year. At 15¢ lb. that is $438 gain in income a year."

◆

'Lumpy Jaw' Losses

A type of "ray" fungus is now costing the nation's livestock industry more than $25 million a year in losses, but, according to the Louisiana State University Extension Service, the disease can be treated by a veterinarian with into-the-vein medication or sur-

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A series of five articles by Al P. Nelson, special writer for Feedstuffs

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gery if it is detected in its early stages.

In cattle, the fungus causes a condition known as "actino" or "lumpy jaw" and a kindred condition called "woody tongue." Lumpy jaw causes swellings of the lower jaw bone or facial bones of cattle and is responsible for thousands of condemnations at packing plants.

The Louisiana extension service suggests that producers with livestock on pasture or in the feed lot should move healthy stock away from animals with lumpy jaw to avoid spreading the disease through contaminated bedding, feed or water. Also, it is advised that areas where the animals sleep and eat be cleaned and disinfected.

◆

High-Moisture Corn

It was suggested to producers recently at Michigan State University that they may be able to save as much as 25% of the corn left in the field because of poor harvesting conditions by picking earlier to avoid bad weather and storing the high-moisture corn in conventional concrete stave silos.

Experiments with dairy cows at Michigan have indicated that the feeding value of high-moisture corn is about as good as conventially harvested corn.

Michigan experimenters concluded that a concrete stave silo is a "very satisfactory" storage facility for high-moisture corn, that the optimum moisture content appears to be about 30% and that enough livestock should be fed the corn to use about 2 in. a day from the silo to keep spoilage low.

◆

Saving Baby Pigs

How much money does a pork producer lose when a pig dies before weaning?

Alabama Polytechnic Institute doesn't answer this question with a definite figure because of the varying factors involved, but it does say that fixed costs, regardless of litter size, make it important for him to save as many pigs as possible.

Research has shown that, on the average, sow feed, housing, labor and board charges add up to about $35 per litter. By the time pigs are weaned, their owners have invested an average of $75 per litter.

From the University of Illinois comes the advice that there is no substitute for sanitation, planning and elbow grease when it comes to preventing baby pig losses.

Some common causes of baby pig losses and the steps farmers can take to avoid them are outlined here by Dr. P. D. Beamer, University of Illinois veterinarian:

1. Anemia—due to shortage of iron in blood. Place uncontaminated dirt in pig creeps or sprinkle iron salts solution over dirt. Soluble iron salts may be given by mouth or injectable iron may be used.

2. Scours—a type of scours has been reported that seems to be caused by the toxic quality of sow's milk. When this condition appears, hand-feed pigs on enriched cow's milk.

3. TGE (transmissible gastroenteritis)—the most rapidly fatal baby pig disease. The exact means of perpetuation is not known, but it may be transmitted from an infected sow to her newborn pigs. So far there is no medical treatment for TGE. Buying replacement stock that is 100% clean is the surest way of keeping TGE off the farm. Also, it is advised that visitors be kept away from breeding animals and young pigs.

4. Rickets—caused by lack of calcium or vitamin D in sow's milk. Sow rations should contain needed calcium, phosphorus and vitamin D.

5. Baby pig disease (hypoglycemia)—caused by sugar deficiency. Feed pregnant sows a balanced ration. Glucose injections may help to save pigs.

6. Parasites. Keep pigs out of old hog lots and buildings. Raise them on pasture in sanitary surroundings.

7. Erysipelas. In areas where this disease is a problem, have pigs vaccinated soon after birth.

8. Cholera. Have all pigs vaccinated around weaning time, as the disease is a constant threat to the hog crop.

Another step in saving baby pigs is to provide heat during the first few days after farrowing. This is especially important for early-farrowed pigs, according to Dr. Beamer.

Many baby pig diseases can be traced back to faulty feeding of the sow. If she does not get the right rations, she cannot nourish her pigs properly, Dr. Beamer says.

POULTRY QUEEN — Reigning as Vermont poultry queen for 1959 is Miss Hazel Gilman, 16, Marshfield, Vt. She was chosen queen at a meeting of the state's poultry association during the recent Vermont Farm Show week. Miss Gilman is the daughter of Roger Gilman, district supervisor and territory representative of Park & Pollard Co. The judging was done by Mrs. Robert Staffor, wife of the governor of Vermont; Allan Speir, superintendent of poultry and eggs, Vermont State Department of Agriculture, and Joel Chandler, WCAX radio and television station.

ELEVATOR REMODELING

RAVENNA-KENT, OHIO—The Mayhew Elevator, which the Farm Bureau Cooperative Assn. purchased several months ago, is being remodeled, announced Robert Benshof, Farm Bureau manager. Upon its completion, the old Farm Bureau Co-op mill will be closed and all business will be transacted at the Mayhew mill.

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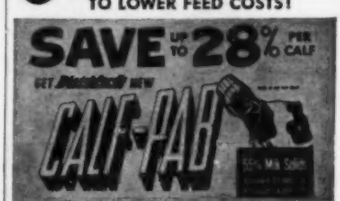

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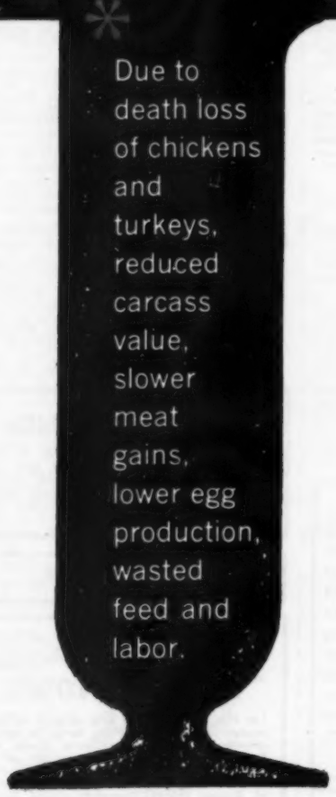

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Portable Bagging—Model No. F43 W/motor—Portable	350.00
Scale—Automatic Richardson GGG-38, Soft Feed Bagging Agitator, ½ H.P. motor	600.00
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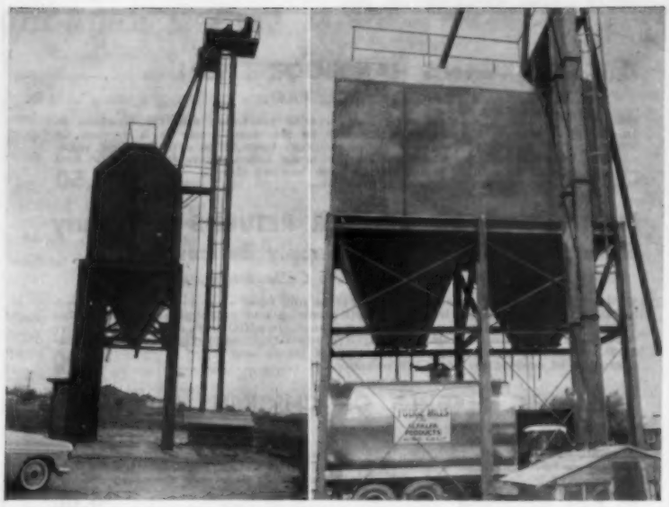
MOO--ORE NEWS IN FEEDSTUFFS



RAILHEAD FACILITIES—Fudge Mills, Inc., Los Angeles, has completed erection of these bulk feed railhead facilities at Chino, Cal., for delivery of dehydrated alfalfa meal, crumbles and dairy pellets. Pictures show end view (left) and side view (right). An additional overhead tank and two round ground-level tanks are to be constructed.

Fudge Mills Erects Railhead Facilities

CHINO, CAL.—New railhead facilities for bulk delivery have been completed here by Fudge Mills, Inc., Los Angeles, manufacturer of alfalfa products, according to Royer M. Fudge, plant manager. Total capacity is equal to two 50-ft. covered hopper cars, he said.

Immediate expansion plans call for an additional overhead tank and two round ground-level tanks, increasing the company's storage capacity by more than 500 tons of dehydrated alfalfa meal and crumbles and providing facilities for alfalfa dairy pellets of five eighths of an inch in diameter.

"The primary purpose of this installation is to better serve our dehy customers in this area in the formula feed industry, as many are located within a few miles from here," Mr. Fudge said. "Constant availability here allows customers to reduce their inventory space needed for dehy, as well as supplying a fresh quality assurance.

"We believe our new installation is the first of its kind in the industry, and will be a forerunner of operational setups throughout the nation as bulk mixing facilities become universal in the formula feed industry."

Fudge Mills' sales of alfalfa dairy pellets are approaching a thousand tons a month, Mr. Fudge noted. And it is expected that when the company's expansion program is completed it will be able to handle 3,000 tons of dairy pellets a month. These dairy pellets, he said, are processed at the firm's Brawley dehydration plant, shipped by rail to Chino, elevated to the overhead tanks and delivered daily to dairies in the area.

Mr. Fudge said alfalfa pellet sales will be made on an f.o.b. Chino or delivered basis "to allow the smaller feed manufacturers to utilize their own bulk trucks on a back haul and draw from our inventory as needed."

According to Mr. Fudge, the company does not favor inert gas storage in conjunction with its plants and gears its production to consumer demand. "Last year, at least one of our plants in California was running every day of the year, except Sundays and holidays, and in some cases, even then," he said.

H. A. Lamb Named to New Post at Kraft

CHICAGO—Hershel A. Lamb has been named marketing manager of the industrial products division of Kraft Foods Co., it was announced by Kraft's director of marketing, Chester R. Green. Robert S. Lochridge will be marketing manager of Kraft's institutional products division.

Hershel Lamb

Mr. Green said that due to the increased importance and growth of the formerly combined institutional and industrial divisions, both headed by Mr. Lochridge, it was deemed necessary to separate the divisions.

Mr. Lamb, formerly southern division institutional sales manager, will have R. W. Prenzno as product advertising and sales promotion manager, and three national sales managers, J. J. Zima, P. A. McCombs and J. E. Crawford.

Texas Firm Replaces Mill Lost in Fire

LAMESA, TEXAS — The Clark Feed Co. is now back to normal after a disastrous fire last year which destroyed the old plant.

J. C. Clark, owner, erected a 100 by 40 ft. sheet metal building and added new equipment, which includes a mixer, grinders and a pellet mill with a capacity of five tons an hour.

The mill is operated electrically and is automatic. Mr. Clark has bulk trucks which deliver feed to ranches as far away as New Mexico. All feed manufactured at the plant is sold under his own JC brand.

"We wouldn't sell much feed here without our pelleting equipment," Mr. Clark said. "Practically all ranchers demand cubes for range cattle and sheep. It handles better, and there is not so much waste from wind and rain."

New Feed Firm

LITTLE ROCK, ARK.—Miller Feed Co., Marianna, Ark., has filed articles of incorporation with the Arkansas secretary of state's office. It will engage in the seed, feed, fertilizer and insecticide business. Incorporators were Glenn U. Miller, Paul Woodware and Murill Webster, all of Marianna, and Jeanette McCollum, of Hughes, Ark. Mr. Miller was listed as the firm's agent.

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CONTROL MEETING

(Continued from page 4)

hoped that some suggestions could be developed by the various groups involved.

Other Subjects

At the closed committee session following the open meeting, it was recommended that the term "feed" or "feed grade" be eliminated where possible from ingredient definitions and that inspectors be so instructed. Earlier, it had been indicated that where "feed" is an integral part of a name, it probably could be left but where "feed grade" is part of a name it could just as well be removed.

On the question of limitations which might be placed on feeds used for experimental purposes, it was noted that this problem applies primarily to feeds in which new drug combinations are used. R. F. Kneeland, Jr., of FDA said there are certain regulations regarding investigational use for products classified as new drugs. Regarding birds or animals fed certain experimental feeds, he said, it is hard to generalize, but firms involved have a real responsibility to see that the resulting food can be legally sold.

On the question of limitations which fication, Bruce Poundstone, AAFCO secretary, pointed out that labeling information should accompany the product. Further discussion indicated that it is sometimes helpful to have labeling information accompany an invoice also. At any rate, it was said, an invoice should identify the feed by more than just a code. Also, it was mentioned that feed manufacturers should provide dealers with sufficient tags to use with bulk feed deliveries.

The use of code numbers for additives in medicated feeds developed some discussion, also. There was one suggestion that the heaviness of overprinting for codes be reduced. Also, it was noted that in certain cases when numbers are used with the name, there may be confusion with protein content. In general, it was indicated that the official-suggested labels for medicated feeds are largely all right.

Mr. Griem cited certain problems in connection with guarantees of vitamins in feeds. For one thing, it was noted that some products are not true vitamins but provide vitamin activity. It was said that guarantees might list so many units of a vitamin or vitamin activity. Manufacturers were asked to send in suggestions on vitamin definitions under these various circumstances. The committee session brought a recommendation that the vitamin investigator continue to consider certain problems and study possible editorial changes. Also, it was recommended that the investigator advance vitamin A supplements from future discussion to tentative definition status.

Antibiotic Listings

The discussion of antibiotic listings in labels brought an explanation and suggestions from Dr. F. W. Quackenbush of Indiana. He reviewed provisions in suggested labeling for medicated feeds, and then he brought out, for one thing, that if an antibiotic is used for growth stimulation and there is no other drug, a medicated label is not required. If an antibiotic is in a supplement at a level of, say, 200 gm. per ton but the drug will be diluted when the supplement is used or mixed with grain, a medicated label is not required, although if the manufacturer wishes, he may put in the level.

It was pointed out that listing of antibiotic level if under 50 gm. per ton in a feed is to be discouraged.

Mr. Kneeland said FDA does not want to see guarantees of amounts of antibiotics if only for growth stimulation purposes. Also, if a product, such as a supplement to be used with grain, is to be used in a manner where growth stimulation is the purpose, that product should not take a medicated label.

The committee session later pointed out that FDA does not care to have feed manufacturers include guarantees of low level antibiotics when no therapeutic intent exists as in growth promoting levels under 50 gm. per ton. Supplements with higher levels but meant to be diluted down to a low level in mixing or free choice feeding need no medicated feed tag.

Additive Amendment

Mr. Kneeland explained the new food additive amendment to the food and drug law, describing various provisions. Certain things will be exempt through prior sanction, it was noted.

Before a substance is cleared, it must be determined whether it is generally safe. If so, it is not part of the law. If not, the supplier must apply for clearance. Food processed from raw agricultural products carrying residues of certain substances may or may not be subject to the law.

FDA has issued some lists of exempt additives, and further lists are planned. For one thing, it is hoped to get out a list of certain trace compounds used in feeds.

Mr. Kneeland pointed out in the discussion that there is no tolerance for an ingredient if that ingredient is considered a carcinogen (cancer-producing) when ingested by man or animal.

It is this provision (Delaney amendment) which is currently causing certain problems in connection with the status of arsenicals and estrogens in feeds. (Also see story on page 00.)

BUYER GROUP

(Continued from page 6)

and he said that if feed firms buy from reliable suppliers, they can know quite well what they are getting, including average sugar content. He said there is a definite ratio between Brix and sugar content.

Dr. Richardson said he is convinced that an adequate job of analysis can be done without too much difficulty.

Further Work Needed

George Gibson, Yieldmor Feeds, Inc., Piqua, Ohio, who represents the purchasing agents in contacts on molasses and fermentation products, said further work on the molasses question is needed, and he said his subcommittee had decided to work with the feed ingredients section of the AFMA's Nutrition Council.

F. M. Becker, Farm Bureau Milling Co., Hammond, Ind., chairman of the buyers' group executive committee, commented that "difficult analytical procedures have drawbacks, but necessity is sometimes the mother of invention." He said problems with analytical procedures for other products had been overcome, and further work should be done on the molasses question.

In the election of officers, Mr. Becker was reelected chairman, and Elmer Korte, McMillen Feed Mills, Ft. Wayne, Ind., was reelected secretary. New members of the executive committee include Ted Harstad, Doughboy Industries, Inc., New Richmond, Wis.; A. L. Huggins, Supersweet Feeds, Minneapolis; Charles R. Hopkins, E. C. & W. L. Hopkins, Inc., Greenfield, N.H.; Jess Humpton, J. W. Eshelman & Sons, Lancaster, Pa.; John Broshard, Alabama Flour Mills, Decatur, Ala., and James Hogan, Ralston Purina Co., St. Louis.

Herbert Sharp, secretary of the Grain & Feed Dealers National Assn., addressed the buyers briefly, calling attention to an association work session next September and the shift to holding the group's annual meeting in March. The next convention will be March 5-8 in Kansas City. The attention of industries not having their own trade rules was called to the trade rules of the GFDNA.

Sub-Committee Reports

Another part of the meeting included reports by sub-committee chairmen on their work with various ingredient groups.

Larry Alley, Pay Way Feed Mills, pointed out work with the Millers National Federation on standardized trading rules for millfeed. He said progress is being made.

J. W. Sloan, Cosby-Hodges Milling Co., mentioned work with the American Dehydrators Assn. on fines in alfalfa pellets. He said no standard has been developed yet and that perhaps the feed industry could suggest a standard.

R. A. Hoffman, Murphy Products Co., said work with renderers and the fisheries industry is continuing in regard to product improvement, and the renderers are working on trade rules.

D. C. Kingston, Maritime Milling Co., responsible for feed control liaison, noted that changes in millfeed definitions are being considered. The proposed changes are to be discussed further.

Meanwhile, it was pointed out by Mr. Becker, work with the Nutrition Council on several additional ingredient purchasing guides is going forward. The AFMA book of purchasing guides has been very useful and helpful to feed firms, he pointed out.

TRADING BY WEIGHT

(Continued from page 1)

for trading in weight. Twelve national organizations will be asked to name representatives to serve on the committee and to meet soon for exploratory programming.

"These organizations represent a broad cross section of all agricultural interests," said Mr. McDowell.

He said plans are to meet with state and federal government agencies and the grain trade, with the aim of adopting a standard practice of trading grain by weight.

In the proposed change to cwt. trading, Mr. McDowell said, the state departments of agriculture group will have the role of a "catalyst."

"We will not dictate a change," he said, "but as a neutral agency, we can be of help; we can help clear the air; and we can help bring about the change if most people want it."

Mr. McDowell listed the following as the organizations which will be asked to name representatives on the national committee for trading in weight: American Farm Bureau Federation; American Feed Manufacturers Assn.; Commodity Stabilization Service; Grain & Feed Dealers National Assn.; National Association of County Agents; National Association of State Departments of Agriculture; National Conference on Weights and Measures; National Council of Farmer Cooperatives; National Farmers Union; National Federation of Grain Cooperatives; National Grain Trade Council; National Grange.

In his talk Mr. McDowell pointed out that his association last fall had adopted a resolution encouraging the grain trade, as well as the state and federal governments, to adopt the cwt. as the basic unit for trading in grains. The resolution also called for formation of the national committee for trading in weight to coordinate all of the various groups' efforts in achieving this objective. Further action along these lines was taken at a recent meeting of the association's executive committee.

Mr. McDowell said that the organizations listed above will be contacted soon and will be asked to designate representatives to serve on the committee. It is hoped, he said, that the initial meeting can be held this summer.

In explaining the interest of his group in the hundredweight proposal, Mr. McDowell cited some of the work of state departments of agriculture. This includes weights and measures work in 35 of the departments, plus feed control work and other activities.

Mr. McDowell pointed out that commercial feed, flour and meal are all traded on a weight basis, and feed is formulated on the basis of weight. Also, he noted, grain sold by the bushel is first weighed in hundredweights and then converted mathematically to bushels to make payment. This, he declared, represents an unnecessary step and affords the possibility of more errors. In addition, all transportation charges for grain are on a weight basis.

Earlier, G. B. Whitfield, controller, the Quaker Oats Co., Chicago, outlined the reasons for and the ways in which his company went over to a hundredweight basis in its milling and grain operations. Billing and record keeping and other activities are on a hundredweight basis. This, said Mr. Whitfield, has saved a good deal of work and results in less possibility of error.

F. M. Becker, chairman of the AFMA purchasing agents' group, said that plans for the national committee for trading in weight are a step forward. The purchasing agents, he said, endorse and support the plan, and are asking the AFMA board to support it. The group also is recommending that future action in this field be channeled through the national committee, which, it is expected, will develop procedures to expedite the change.

Chicago Dinner-Dance Has Record Turnout

CHICAGO—An estimated 250 members, wives and guests attended the annual spring dinner-dance of the Chicago Feed Club at the Evanston Golf Club the evening of May 9.

The attendance, a record for the event, was swollen by many out-of-town guests in the city to attend the annual American Feed Manufacturers Assn. convention May 11-13.

Several door prizes for the ladies, buffet dinner, music and dancing brought general agreement that the dance was the best in the club's history. The next club event will be a golf and field day June 16 at the Woodridge Country Club.

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A AND D FEEDING OIL

Denver: Demand fair; trend steady; supply ample; 300 D, 2,250 A 22¢ lb.

Boston: Demand fair; supply adequate; 600 D, 1,500 A 17½¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢; 300 D, 750 A 14¾¢; 400 D, 3,000 A 20¢; 300 D, 3,000 A 19½¢; 75 D, 750 A 14½¢.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7½¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

New York: Demand fair; trend steady; supply limited; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½ @15½¢, 1,500 A 15½@17¢, 2,250 A 17½ @20¢, 3,000 A 19@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

ALFALFA MEAL

Portland: Demand steady; trend lower; supply ample; dehydrated $63.50.

Ft. Worth: Demand good; supply sufficient; 17%, 100,000 A $63, truck.

Cincinnati: Demand poor; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $78.50.

Denver: Demand fair; trend steady; supply ample; dehydrated $52.

Philadelphia: Demand and supply fair; 12% dehydrated $78.50.

New Orleans: Demand fair; trend steady; supply light; vitamin A, 17% $79@80; pellets $77@79.

Los Angeles: Demand fair; trend steady; supply ample; dehydrated meal, 17% protein, 100,000 A $50, bulk; dehydrated pellet meal, 17% protein, 100,000 A $53, bulk; suncured meal, 15% protein $42@43, bulk; suncured crumbles, 15% protein $44@45, bulk.

Kansas City: Demand fairly good; trend steady to weaker, although a stronger trend developed when rains slowed production and supplies tightened up, because of this situation, and because of cool weather that has slowed growth in Nebraska, the price situation is rather confused; dehydrated alfalfa meal with 17% protein and 100,000 units vitamin A guaranteed on arrival: unprocessed meal $52.50@57.50 sacked, reground pellets $60 sacked, reground pellets, greased $62, pellets $48@55, bulk, with some prices having dipped lower than that before bouncing back up; 18% protein, 125,000 units A meal $64, sacked; 20% protein, 150,000 A pellets $50, bulk; suncured meal demand is very slow with supplies also light, No. 1 fine ground $35.50@36, No. 1 ¼-in. $33, No. 2 ¼-in. $31, sacked.

Boston: Demand fair; supply adequate; dehydrated, 17% $79; suncured, 13% $48, nominal.

Chicago: Demand fair; trend easier; supply increasing; 17% dehydrated, 100,000 units vitamin A guaranteed $56.50; 15% suncured, no quotes.

Seattle: Demand fair; trend steady; supply good; 15% protein suncured $44, truck loads; 136,000 A unit dehydrated $69, truck loads.

Minneapolis: Fair demand; weaker trend as production picks up; 17% dehydrated, 100,000 units vitamin A, reground pellets $59 and oiled reground $61, a cut of $5 from previous week.

Buffalo: Demand fair; trend steady; supply adequate; $81, Boston.

Memphis: Demand fair; trend steady to lower; supply light; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $60.

Omaha: Demand good; trend steady; supply tight; 17% dehydrated, 100,000 A units bulk pellets $55; sacked meal $60; Omaha basis.

St. Louis: Demand slow; trend lower; supply increasing; suncured 13% fine $39; 17% dehydrated, 100,000 A $55.

ANIMAL FAT (STABILIZED)

New Orleans: Demand fair; trend steady; supply adequate; 7@7½¢ lb., tank cars.

San Francisco: Demand fair; supply ample; bleachable fancy 7¾¢ lb.; yellow grease 7¼¢ lb.

Boston: Demand and supply steady; tallow 7¾¢ lb.; yellow grease 7¢ lb.

Ft. Worth: Demand good; supply rather tight; prime tallow, tank cars 7¼¢ lb.; drums 8¾¢ lb., f.o.b. north Texas packing plants, with returnable drums.

Kansas City: Demand spotty; supply adequate; trend steady; prime tallow 6¾¢ lb., tank car.

Louisville: Demand reasonable; trend steady; supply good; bleachable fancy 7¼¢ lb., white tallow 7¾¢ lb., yellow grease 6¾¢ lb.

Chicago: Demand steady; supply ample; trend firm; bleachable fancy tallow, tank, truck or car lots 7¢ lb.; No. 1 yellow grease 6¼¢ lb.

Atlanta: Demand fair to good; trend steady; supply good on animal, tight on poultry; 7¢ lb. in bulk, f.o.b. Georgia and Alabama producing mills.

BARLEY FEED

Portland: Demand slow; supply ample; trend unchanged; rolled $62; ground $60.

Ogden: Supply normal; rolled $54@59; whole barley $46@51.

San Francisco: Demand fair; supply ample; rolled $61.60; ground $60.50.

Los Angeles: Demand slow; trend considerably weaker; supply ample; standard rolled $3 cwt.; standard ground $3 cwt.

Boston: Demand slow; supply good; $45.

Baltimore: Demand light; trend steady; supply ample; $47.50.

New Orleans: Demand slow; trend unchanged; supply fair; $64@65.

Philadelphia: Demand slow; supply fair; pulverized $50.50.

Chicago: Demand light; trend steady; supply adequate; $37.

Seattle: Demand fair; trend steady; supply good; $51, bulk, truck lots.

Milwaukee: Demand good; supply fair; needles 96¢@$1.04 cwt.; ground screenings $28, sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

Denver: Demand fair; trend good; supply ample; $23.

Chicago: Demand steady; trend firm; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh, fine $13.25 net.

BLOOD FLOUR

Louisville: Demand slow; trend weak; supply good; $100@107.50.

BLOOD MEAL

Louisville: Demand slow; trend weak; supply good; $100@107.50.

Portland: Demand good; trend higher; supply limited; $135.

Ogden: Supply average; $110, in 100-lb. bags, f.o.b. Ogden.

New Orleans: Demand fair; trend unchanged; supply normal; $120@125.

San Francisco: Demand good; supply tight; $7.50 a unit of ammonia.

Los Angeles: Demand fair; trend unchanged; supply adequate; $7.50 a unit of ammonia.

Chicago: Demand and supply fair; trend steady; guaranteed 80% protein, in 100-lb. bags $135.

BONE MEAL (STEAMED)

Louisville: Demand dull; trend weak; supply light; $100@105.

New Orleans: Demand slow; trend steady; supply light; $105@110.

Boston: Demand and supply steady; $90.

San Francisco: Demand good; supply ample; $75.

Cincinnati: Demand fair; trend steady; supply adequate; $95, Cincinnati.

Denver: Demand good; trend strong; supply nil; $110, nominal.

Los Angeles: Demand better; trend unchanged; supply tight; imported $80 in 20-ton lots.

Ft. Worth: Demand good; supply light; $90, f.o.b. Ft. Worth, local manufacture.

Portland: Demand good; trend higher; supply ample; $102.

Chicago: Demand fair; trend steady; supply limited; in 50-lb. bags $105.

Seattle: Demand good; trend firm; supply limited; $87, ex-dock, truck lots.

Buffalo: Demand good; trend steady; supply limited; $105.

BREWERS DRIED GRAINS

Louisville: Demand slow; trend weak; supply good; $48.

Cincinnati: Demand poor; trend steady; supply adequate; $54.

Ft. Worth: Demand slow; supply moderate; 26% protein $52.40, May, delivered, Ft. Worth.

Boston: Demand and supply fair; 23% $52, 26% $54@56.

Philadelphia: Demand and supply fair; trend unsettled; $54.

New Orleans: Demand fair; trend easy; supply good; $50@51.50.

Chicago: Demand and supply fair; trend steady; 26%, bulk $40.

San Francisco: Demand fair; supply ample; $54.

Los Angeles: Demand fair; trend unchanged; supply limited; $49.50 bulk, $53.50 sacked.

Buffalo: Demand fair; trend steady; supply good; $45.50, bulk, Boston.

St. Louis: Demand fair; trend lower; supply ample; $45.

Milwaukee: Demand good; supply fair; $47.50.

BREWERS DRIED YEAST

San Francisco: Demand fair; supply good; 10¢ lb.

Louisville: Demand slow; trend steady; supply good; 10@10½¢ lb.

Portland: Demand good; supply ample; trend unchanged; 8¾¢ lb.

Denver: Demand light; trend steady; supply ample; 9¢ lb., f.o.b. Golden, Colo.

Boston: Demand and supply steady; 11¢ lb.

Los Angeles: Demand fair; trend unchanged; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Chicago: Demand very good; supply adequate; trend steady; in carlots 9½@10½¢ lb.; l.c.l. 9¾@12¼¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Buffalo: Demand fair; trend weaker; supply ample; $10.25 cwt.

Omaha: 10½¢ lb.

St. Louis: Demand good; trend steady; supply limited; carlots 9½¢ lb.; ton lots 10½¢ lb.; less than ton lots 11½¢ lb.

Milwaukee: Demand good; trend steady; supply limited; carlots 10@11¢ lb.; l.c.l. 10½@12½¢ lb.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

BUTTERMILK-CONDENSED

Philadelphia: Demand slow; supply light; $4.25 cwt.

New Orleans: Demand dull; trend steady; supply normal; $4.25@4.30 cwt.

Boston: Demand slow; supply tight; 3½¢ lb.

San Francisco: Demand fair; supply good; $5 cwt.

Ogden: Supply normal; $4.40, 100-lb. drum.

Louisville: Demand slow; trend steady; supply nil; $4.25 cwt., nominal.

Wichita: Demand slow; supply good; $2.90 cwt. in barrels.

Los Angeles: Demand fair; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

Chicago: Demand and supply fair; trend steady; carlots, $3.25@3.50 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.53, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Los Angeles: Demand fair; trend unchanged; supply ample; $10.25.

Chicago: Demand steady; trend firm; supply adequate; fine grind, plain, 100-lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

CHARCOAL

Boston: Demand and supply steady; $100.

San Francisco: Demand steady; supply ample; $141.

Los Angeles: Demand fair; trend steady; supply adequate; hardwood poultry $156 in less than ton lots, $144.40 in ton lots.

Chicago: Demand quiet; trend steady; supply ample; poultry charcoal, in 50-lb. multiwalls $110.

COCONUT OIL MEAL

San Francisco: Demand good; supply tight; solvent $65.

Portland: Demand slow; supply ample; trend unchanged; $68.

Los Angeles: Demand slow; trend weaker; supply adequate; copra cake $72@73, bulk, offshore/spot.

Seattle: Demand fair; supply ample; $75, via truck (California).

COD LIVER OIL (FORTIFIED)

Boston: Demand fair; supply adequate; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

New York: Demand limited; supply fair; trend steady; price per lb. in 55 gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

New Orleans: Demand light; supply limited; trend steady; $109@112.

Denver: Demand fair; trend steady; supply ample; dried $182.40.

Boston: Demand steady; supply adequate; 5¢ lb.

Los Angeles: Demand fair; trend unchanged; supply limited; 5¢ lb.

New York: Demand fair; trend steady; supply tight; 5¢ lb., f.o.b. eastern shore.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $51.80, meal $76.80.
Atlanta: Feed $57.98, meal $82.98.
Birmingham: Feed $56.84, meal $81.64.
Boston: Feed $56.84, meal $81.84.
Chicago: Feed $45, meal $70.
Cleveland: Feed $53.14, meal $78.14.
Denver: Feed $55.51, meal $80.51.
Ft. Worth: Feed $53.96, meal $78.96.
Indianapolis: Feed $50.36, meal $75.36.
Kansas City: Feed $45, meal $70.
Louisville: Feed $52.21, meal $77.21.
New Orleans: Feed $55.20, meal $80.20.
New York: Feed $56.43, meal $81.43.
Norfolk: Feed $55.71, meal $80.71.
Philadelphia: Feed $56.02, meal $81.02.
Pittsburgh: Feed $53.96, meal $78.96.
St. Louis: Feed $45, meal $70.

CORN OIL MEAL

Louisville: Demand dull; trend steady; supply light; $56.45.

Cincinnati: Demand fair; trend steady; supply adequate; $51.50.

COTTONSEED OIL MEAL

Wichita: Demand poor; supply sufficient; 41% old process $72.

Philadelphia: Demand slow; supply fair; $80.

Louisville: Demand slow; trend steady; supply normal; old process $69; new process $68.

Ogden: Supply normal; 41% $77@82.

Cincinnati: Demand poor; trend steady; supply adequate; $71.

Denver: Demand fair; trend steady; supply ample; $70.60.

San Francisco: Demand good; supply tight; 41% $77; 44% $79.

Los Angeles: Demand and trend steady; supply scarce; $71@72 bulk.

Ft. Worth: Demand slow; supply sufficient; 41% old process $71, prompt; pellets $2 additional; cottonseed hulls $16@18.

Portland: Demand good; trend higher; supply scarce; $79.

New Orleans: Demand fair; trend steady; supply adequate; $75@75.50.

Boston: Demand poor; supply ample; $82.

Kansas City: Demand slow; trend steady; supply dwindling as crush pushes toward completion, but enough for demand; solvent meal $62, Memphis; old process $62 @63.

Chicago: Demand slow; supply good; 41% hydraulic $63.50 and 41% solvent $64, both Memphis basis.

Seattle: Demand fair; trend steady; supply ample; 41% expeller process $85, truck lots.

Atlanta: Demand fair; trend steady; supply ample; 41% $69@70.

Memphis: Demand light; trend lower; supply limited; prime 41% protein, old process $63; new process, 41% solvent $62.

Buffalo: Demand poor; trend steady; supply adequate; $80.50, Boston.

Omaha: Demand slow; trend adequate; supply easy; 41% solvent $66.10, bulk.

St. Louis: Demand slow; trend steady; supply light; solvent $68.

CURACAO PHOSPHATE

New York: Demand steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9%@10¢ lb.; 3,000 ICU 11½@12¢ lb., in ton lots.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

New York: Demand and supply good; trend steady; price per lb. in 50- and 100-lb. bags, or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand good; supply fair; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; carlots $63.50, truck load $64.25, net ton, f.o.b. Coronet in 100-lb. multiwall bags $60.50 and $61.25 in bulk.

Cincinnati: 18% phosphorus $81; 13% phosphorus $64.98.

DICALCIUM PHOSPHATE

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

Denver: Demand fair; trend steady; supply ample; $93.60.

Portland: Demand good; supply ample; trend unchanged; $58.

Cincinnati: 18½% phosphorus $92@93.

DISTILLERS DRIED GRAINS

Philadelphia: Demand slow; supply light; trend unsettled; light $62.

Boston: Demand good; supply fair; light $62, dark $62.50.

Louisville: Demand fair; trend easy; sup-

ply good; some shading reported; bourbon grains: light $54, dark $55, solubles $77.

San Francisco: Demand fair; supply ample; solubles $85.

Cincinnati: Demand poor; trend steady; supply adequate; by truck $52.50.

Seattle: Demand good; trend steady; supply limited; $67.50, truck lots.

Buffalo: Demand fair; trend steady to lower; supply good; $57, bulk, Boston.

DRIED BEET PULP

Portland: Demand good; trend higher; supply ample; $58.

Los Angeles: Demand and trend steady; supply ample; molasses $47.30, bulk.

San Francisco: Demand good; supply fair; $51.50.

New Orleans: Demand fair; trend steady; supply limited; $60@61.

Denver: Demand good; trend steady; supply ample; $49.23.

Boston: Demand and supply steady; domestic $59.50; Canadian $60.50.

Ogden: Supply normal; $44@45.

Ft. Worth: Demand slow; offerings light; carlots, 50-lb. papers $61.

Seattle: Demand good; trend firm; supply limited; $49, carlots.

Buffalo: Demand fair; trend steady; supply adequate; $60, Boston.

Atlanta: Demand fair; trend steady; supply limited; $65.

Milwaukee: Demand good; supply fair; molasses $54; plain $54.

DRIED BUTTERMILK

Ogden: Supply normal; $8.50, 100-lb. bag.

Louisville: Demand slow; trend steady; supply light; 12@12½¢ lb.

San Francisco: Demand fair; supply ample; 11½¢ lb.

New Orleans: Demand fair; trend unchanged; supply adequate; $11.50@12 cwt.

Los Angeles: Demand fair; trend unchanged; supply adequate; 11¾¢ lb.

Chicago: Demand good; trend steady; supply light; medium acid $10.75@11 cwt.; sweet cream $11@11.25 cwt.

Buffalo: Demand and trend steady; supply limited; $11.85 cwt.

Milwaukee: Fair demand; fair supply; steady trend; $10 cwt.

DRIED CITRUS PULP

Boston: Demand slow; supply ample; $34, f.o.b. Florida.

New Orleans: Demand fair; trend steady; supply ample; $35@40, f.o.b. Florida points.

San Francisco: Demand and supply fair; meal $54.

Los Angeles: Demand and trend steady; supply light; orange pulp $43, bulk; lemon pulp $42, bulk.

Atlanta: Demand and supply good; trend steady; $35@40, f.o.b. Florida producing mills; meal $30@35, f.o.b.

Buffalo: Demand fair; trend steady; supply fair; $35, f.o.b. Florida points.

DRIED SKIM MILK

San Francisco: Demand and supply fair; 13½¢ lb.

Louisville: Demand slow; trend steady; supply light; 12@12½¢ lb.

Boston: Demand good; supply scarce; 12¢ lb.

New Orleans: Demand fair; trend unchanged; supply ample; $11@11.50 cwt.

Philadelphia: Demand slow; supply light; $12.50 cwt.

Portland: Demand good; supply ample; trend unchanged; 13¢ lb.

Ogden: Supply normal; $15.15, 100-lb. drum.

Los Angeles: Demand fair; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

Cincinnati: Demand fair; trend steady; supply adequate; 10¾¢ lb.

Chicago: Demand good; trend steady; supply fair; $10.75@11 cwt.

Buffalo: Demand fair; trend steady; supply ample; spray $10.65 cwt.

Minneapolis: Fairly tight supply holds price firm at $11@11.25 cwt.

Milwaukee: Demand and supply fair; $11 cwt.

DRIED WHEY

San Francisco: Demand steady; supply good; $5.75 cwt.

Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.

Denver: Demand fair; trend steady; supply ample; $6.50 cwt., Denver.

New Orleans: Demand good; supply ample; trend steady; $5.50@6 cwt.

Los Angeles: Demand fair; trend unchanged; supply ample; $6.35 cwt. in l.c.l.

Louisville: Demand dull; trend steady; supply light; 6½¢ lb.

Portland: Demand good; supply ample; trend unchanged; $7 cwt.

Boston: Demand steady; supply short; 5½¢ lb.

Ogden: Supply normal; $6.90, 100-lb. bag.

Philadelphia: Demand slow; supply light; $6.50 cwt.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6, sacked, delivered; $6.25 ton lots, f.o.b. warehouse, Ft. Worth.

Kansas City: Demand good; trend steady; supply light; $5.50 cwt., producers' plants for regular and partially delactosed.

Chicago: Demand fair; trend steady; supply adequate; $5.50 cwt., f.o.b. plant.

Seattle: Demand and trend steady; supply good; $6.40 cwt., ex-warehouse, l.c.l.

Minneapolis: Fair demand; fair supply; steady trend; $5.50 cwt., producers' points.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand fair; trend unchanged; supply adequate; $1.25 a unit of protein.

Boston: Demand fair; supply spotty; strike imminent; $140, f.o.b. East Coast points.

Ft. Worth: Demand good; supply very limited; 85% to 87% protein $105, nominal, f.o.b. trucks, north Texas plants.

Salisbury, Md.: Good demand; limited supply; steady trend; $100, bulk, f.o.b. producers' plants.

Atlanta: Demand good; trend steady; supply ample; $105.50, f.o.b. Georgia and Alabama producing mills.

FISH MEAL

Louisville: Demand dull; trend easy; supply light; $170, nominal.

Portland: Demand good; supply limited; trend higher; $2.30 a unit.

Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $172@174.

San Francisco: Demand good; supply tight; $2.25 a unit of protein.

New Orleans: Demand and supply light; trend steady; menhaden, 60% $150@152; scrap $146@148, f.o.b. Gulf.

Denver: Demand good; trend steady; supply very tight; $2.45 a unit of protein, f.o.b. West Coast.

Ft. Worth: Demand poor; limited offerings; 65% Peruvian $152, immediate, f.o.b. Houston.

Los Angeles: Demand slow; trend steady; supply light; local production, 60% protein $2.50 a unit, bulk.

Cincinnati: Demand fair; trend steady; supply adequate; $160.

Chicago: Demand increasing; supply fair; trend steady; new crop menhaden, 60% protein, East Coast meal $153@140, sacked; scrap $134@136; Gulf meal $135@140 and scrap $131@134; East Coast Whitefish meal, sacked $137@140 and scrap $133@136; Canadian herring, 70% protein $2.25 a unit of protein.

Seattle: Demand fair; trend firm; supply good; $2.43 a unit protein, truck lots (Canadian production).

Minneapolis: West Coast material still quoted nominally, unchanged from week ago, but lower prices for more available East Coast and Gulf meal indicate a weaker trend; 60% blended fish meal quoted nominally at $180, delivered; 70% herring still quite firm at $2.22 a unit, West Coast.

Atlanta: Demand fair; trend weak; supply limited; 60% menhaden $135 for meal, f.o.b. Gulf producing plants; $129 for scrap, f.o.b. Atlantic and Gulf ports.

Buffalo: Demand good; trend steady; supply ample; 60% protein menhaden $170 bulk, $175 sacked.

Milwaukee: Demand good; supply fair; 60% $159.50.

HAY

Louisville: Demand very dull; trend easing; supply good; No. 1 local hay $25@30, No. 2 $23@25; straw $18@20; excellent grass and old hay plentiful.

Denver: Demand average; trend fair; supply ample; alfalfa, baled $24@25, first and second cutting, delivered in Denver.

Wichita: Demand poor; supply ample; prairie $15; alfalfa $15@18.

Portland: Demand good; supply ample; trend unchanged; $34.

Ogden: Supply average; new crop being harvested; $1@1.25 bale; $18 ton in the barn.

Boston: Demand and supply steady; No. 2 $40@42.

Philadelphia: Demand slow; supply light; $25@26.

Cincinnati: Demand poor; trend steady; supply adequate; by truck, No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.

Los Angeles: Demand fair; supplies adequate; U.S. No. 1 $38@37; U.S. No. 2 leafy $33@34; U.S. No. 2 green $29@31; U.S. No. 2 $26@28.

Ft. Worth: Demand fair for alfalfa; practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.

Seattle: Demand fair; trend easy; supply good; alfalfa, U.S. No. 2 green, new crop $28, truck lots.

HOMINY FEED

New Orleans: Demand fair; trend steady; supply fair; $54@54.50.

Cincinnati: Demand fair; trend steady; supply adequate; $51@51.50.

Louisville: Demand dull; trend steady; supply light; $49.

Boston: Demand fair; supply steady; $55, bulk.

Kansas City: Demand slow in this area, good north of here; trend steady; supply fairly tight; yellow $41.50@42, bulk; white $40.50, bulk, $3.50 more for sacks.

Chicago: Demand good; trend firm; supply light; $50.

Seattle: Demand fair; trend firm; supply good; $56, carlots.

St. Louis: Demand slow; trend steady; supply limited; yellow $49.

Buffalo: Demand fair; trend steady; supply fair; $54.50, bulk, Boston.

Memphis: Demand poor; trend steady; supply light; white $49, yellow $51.

Milwaukee: Demand good; supply fair; $48.50, June shipment.

LINSEED OIL MEAL

Boston: Demand slow; supply light; $92.

New Orleans: Demand dull; trend steady; supply ample; $87.50@88.

Cincinnati: Demand poor; trend steady; supply adequate; new process $88.

Ft. Worth: Demand fair; limited offerings for nearby shipment; 34% new process; last half May $87.50, truck; June $84.50, truck or rail.

Louisville: Demand slow; trend steady; supply normal; old or new process $88.50.

Wichita: Demand good; supply insufficient; 34% $88.

Philadelphia: Demand slow; supply fair; trend unsettled; 34% new process $89.50, nominal price.

Portland: Demand slow; supply limited; trend unchanged; $87.

San Francisco: Demand fair; supply ample; $83.

Denver: Demand good; trend steady; no offerings; no quotations.

Los Angeles: Local production, 29% protein, no offerings.

Kansas City: Demand slow; trend steady to stronger as toll crush fails to develop; supply fairly tight but enough for demand; solvent meal $68, bulk, Minneapolis; old process, none offered.

Chicago: Demand and supply fair; 34% solvent $69, Minneapolis basis.

Minneapolis: Good demand and tight supplies keep prices firm at $70.50, bulk, for nearby material; toll crush material expected soon.

Seattle: Demand fair; trend firm; supply limited; 34% protein $90, carloads (Montana).

Omaha: Demand good; trend steady; supply tight; 34% solvent $75.30, bulk; 32% old process, none available.

Milwaukee: Demand good; supply fair; old process $90.50, strictly nominal; new process $79 May, $71.50 last half June, both nominal.

MALT SPROUTS

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $40@41.

Boston: Demand and supply limited; $42.50.

New Orleans: Demand fair; trend steady; supply adequate; $42@44.

Chicago: Demand slow; supply fair; No. 1 uneven bags $33.50; even bags $37.50.

Milwaukee: Demand good; supply fair; odd weights $33.50; even weights $37.

MEAT AND BONE MEAL

Ft. Worth: Demand normal for season; supply sufficient; meat and bone, 50% $98@96.

New Orleans: Demand good; supply ample; trend steady; $102.50@105.

Boston: Demand very slow; supply plentiful; $1.30 a protein unit; converted 50% $77.50.

Louisville: Demand slow; trend weak; supply good; $100@105.

San Francisco: Demand good; supply ample; $2 a unit of protein, bulk.

Cincinnati: Demand fair; trend steady; supply adequate; 50% meat and bone scraps $88.50, Cincinnati.

Wichita: Demand moderate; supply sufficient; 50% $102.50, f.o.b. plant; 55%, no quotations, no offerings.

Ogden: Supply average; $105, in 100-lb. bags.

Portland: Demand good; supply ample; trend unchanged; $2.15 a unit.

Denver: Demand slow; trend slow; supply ample; 50% $93, bagged, truck lots; $90, bulk lots.

Chicago: Demand fair; trend steady; supply light; 50% protein $102.50.

Los Angeles: Demand slower; trend unchanged; supply plentiful; 50% protein $2.10 a unit, bulk.

Kansas City: Demand fair; trend steady; supply ample for demand but not a lot pressing; 50% meat and bone scraps $92.50, sacked.

St. Paul: Ample supplies and only fair demand dropped the price another $5 to a range of $90@95 for 50% meal; trend continues weak.

Seattle: Demand good; trend steady; supply ample; $107.50, 50% protein, ex-warehouse.

New York: Demand fair; trend lower; supply good; 50% $75, 55% $82.50, bulk; 50% $78, 55% $85.50, sacked.

Buffalo: Demand just fair; trend steady; supply ample; 50% meat scraps $87.50 bulk, $92.50 sacked.

Omaha: Demand slow; trend easy; supply ample; $95.

St. Louis: Demand slow; trend weaker; supply adequate; $93.

MILLFEED

Minneapolis: Sacked price a little softer, bulk price holds fairly firm; market generally rather weak; more supplies than interest; sacked bran quoted at $37@39, sacked middlings at $38@39.50; bulk bran $33@34; bulk middlings $34@35; sacked red dog $45 in jutes.

Kansas City: Demand improved, with

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

good demand for mixed cars and millidoor supplies; trend stronger; supply fairly tight for nearby; bran $36.75@37.25, shorts $38@38.75, sacked; bran $30.50@31.25, shorts $33.75@34.50, middlings $33@33.50, bulk.

Wichita: Demand fair; supply sufficient; basis Kansas City: bran $36.50@37, shorts $37.25@37.75; bran declined $2.25 and shorts $2.50, compared with the preceding week.

Omaha: Demand and trend steady; supply ample; sacked bran $38; sacked gray shorts $39; bulk standard midds. $35, all Omaha basis.

Ft. Worth: Demand fair; offerings light for immediate delivery; carlots, burlaps, bran $46, gray shorts $48, bulk middlings $42.50, delivered Texas common points; $1.50 lower on bran and shorts and $1 lower on middlings compared with previous week.

Chicago: Demand for millfeeds did not show improvement during the week ending May 13. Both bran and middlings have been moving at a slow pace again. Demand has been for fairly nearby shipment and largely on a "fill-in" basis. Quotes on standard midds. were shaved another 50¢ or so; bran was being rather firmly held, but red dog, following last week's slash, was cut still further. Quotations: bran, sacked $42.50@43, bulk $36.50@37; standard midds., sacked $43.50@44, bulk $37.50@38; red dog, sacked $46@48, bulk $42@44.

Cincinnati: Demand poor; trend steady; supply adequate; bran $50.50; middlings $51.50.

St. Louis: Demand moderate; trend firm; supply ample; sacked, bran $41.50@42, shorts $42.50@43; bulk, bran $35.50@36, shorts $38.50@39, middlings $37.50@38.

Memphis: Demand fair; trend steady; supply ample; wheat bran $44.80, sacked; gray shorts $45.80, sacked; standard midds. $40.20, bulk.

Buffalo: Sales of millfeed, as a whole, were quiet last week. Demand from the country trade continued to hold up but scattered mixer business was on a spot basis only. Nobody, at this time of year, wants to be oversupplied. There was no undercutting competition from any direction. Flour mill running time was erratic. The $6.50 sacked differential continued to hold. Sacked and bulk bran ended off $2; sacked and bulk middlings were unchanged; bulk red dog was down $4 and sacked was off 50¢. Quotations May 13: bulk bran $39@39.50, sacked $45.50@46.50; bulk middlings $41@41.50, sacked $47.50@48.50; bulk red dog $41.50@42, sacked $48.

Boston: Demand slow; supply adequate; bran and middlings $55.

Philadelphia: Demand spotty; trend unsettled; supply fair; bran $55; standard midds. $56, red dog $57.

New York: Demand fair; trend steady; supply good; bran $52.50@53; standard midds. $53@54.

New Orleans: Demand fair; trend steady; supply ample; sacked, bran $54@54.50, shorts $59@59.50; bulk, bran $50.50@51.35, shorts $54@54.75.

Louisville: Demand slow; trend very weak; supply good; bran $48.10, mixed feed $49.10, shorts $50.60, middlings $52.30.

Denver: Demand fair; trend stronger; supply ample; shorts $49.75, bran $40, mill run $40.50.

Seattle: Demand fair; trend steady; supply limited; $46, common transit points, carlots.

Portland: Demand good; trend higher; supply limited; $44.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $43, middlings $48; to Denver: red bran and mill run $50, middlings $55; to California: red bran and mill run $50.50, middlings $55.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Standard mill run $46.50@47, bulk, demand fair, trend steady, adequate offerings; red bran $50.50@52, bulk, demand slow, trend weaker, ample offerings.

San Francisco: Demand good; supply tight; millfeed $49; red bran $51.50.

MINERAL FEED

Wichita: Demand fair; supply ample; all-purpose with iodine, 50-lb. blocks $97.50, 100-lb. bags $92.50, f.o.b. plant.

Portland: Demand good; supply ample; trend unchanged; $42.

Ogden: Supply average; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

Denver: Demand fair; trend steady; supply ample; $155.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Ft. Worth: Demand fair; supply sufficient; all-purpose granules $90, block 45%; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 2¼% granules $87, phosphorus 2% $77 (all in 50-lb. paper bags).

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

MOLASSES

Louisville: Demand dull; trend steady; supply normal; 12¢ gal., tank car lots, f.o.b. Gulf ports.

Cincinnati: Demand fair; trend steady; supply adequate; 12¼¢ gal., New Orleans.

Denver: Demand poor; trend steady; supply ample; 12¢ gal., New Orleans; $20.52, New Orleans; $21.50, f.o.b. West Coast.

San Francisco: Demand and supply good; $21.50, f.o.b. cars Richmond, Cal.

New Orleans: Demand good; supply adequate; trend steady; 12⅜¢ gal., tank cars and trucks; 600-lb. customers' drums $8.33.

Memphis: Demand poor to fair; trend steady; supply ample; blackstrap 12@12¼¢ gal., tank car, f.o.b. New Orleans, and $28.50 ton, delivered Memphis, truck.

Buffalo: Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

Milwaukee: Demand fair; supply good; blackstrap 12¼¢ gal., f.o.b. New Orleans.

New York: Demand fair; trend steady; supply good; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

St. Louis: Demand slow; trend steady; supply ample; 12¢ gal., New Orleans.

Los Angeles: Demand good; trend steady; supply adequate; $21.50, bulk, f.o.b. tank cars; $21.75, bulk, f.o.b. tank trucks.

Ft. Worth: Demand good; supply sufficient; blackstrap 12¼¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $28.07, seller's market price on date of shipment.

Boston: Demand steady; supply improved; 16½¢ gal. in tank cars.

Kansas City: Demand slow; trend steady; supply adequate; 12¢ gal., tank car, New Orleans.

Minneapolis: Fairly good demand; ample supplies; price dropped a quarter of a cent to 12¼¢ gal., New Orleans; $33.50 ton, tank trucks, delivered in Minneapolis.

Atlanta: Demand practically nil; trend steady; supply good; citrus $18@22.50, bulk, f.o.b. Florida producing plants.

Seattle: Demand fair; trend easy; supply good; $22, f.o.b. Seattle, tank car lots or truck lots.

NIACIN

New York: Trend steady; 55 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Memphis: Demand poor; trend steady; supply scarce; 3½% protein, reground oat feed $23.25.

Louisville: Demand slow; trend stronger; supply normal; reground $24.30, rolled $84.30, feeding $79.30, pulverized white $53.30, crimped white $69.80.

Portland: Demand slow; supply ample; trend unchanged; rolled $65; ground $62; cleaned $65.

Boston: Demand and supply steady; white pulverized $57; reground oat feed $22.50.

Philadelphia: Demand slow; supply fair; pulverized white $54.50; Canadian oat feed $30.50, domestic $25.50.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $49@52; rolled oats $83.50.

Los Angeles: Demand fair; trend unchanged; supply adequate; pulverized oats, local production $62.

Chicago: Demand good; trend firm; supply tight; reground oat feed $17.50; fine ground feeding oatmeal $69.50@72.50; feeding rolled oats $78@81.

Minneapolis: Light demand; supply ample; steady trend; feeding rolled oats $81; feeding oatmeal $70; pulverized $45; crimped $59; reground oat feed $16.

Seattle: Demand and supply fair; trend firm; $53, bulk, truck lots.

OYSTER SHELL

Seattle: Demand and trend steady; supply good; eastern $26, carlots.

Portland: Demand good; supply ample; trend unchanged; western $34; eastern $39; granite grits $28; shell flour $24.

Boston: Demand slow; supply steady; $26.02 in paper.

New Orleans: Demand good; trend firm; supply ample; $25@25.50.

Louisville: Demand good; trend steady; supply good; in 80-lb. paper $23.45; in 50 lb. $22.70; in 25 lb. $28.95.

San Francisco: Demand fair; supply ample; local $15, eastern $24.

Los Angeles: Demand steady; trend unchanged; supply ample; $14.80.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $56.50 for old process, f.o.b. Georgia and Alabama producing mills; solvent process $53, f.o.b.

Milwaukee: Demand and supply fair; 26% $42.

PEAT MOSS

Seattle: Demand and supply good; trend firm; $2.80 bale, truck lots.

New York: Demand good; trend steady; supply short; Canadian, 7 cu. ft. bale, veneer wrapped $3.32, f.o.b.; German, 7⅛ cu. ft. bale $2.95, at dock, New York.

Boston: Demand and supply steady; $3.15 bale.

Philadelphia: Demand good; supply light; $2.95 bale, f.o.b. pier.

Portland: Demand good; supply ample; trend unchanged; $3 bale.

San Francisco: Demand and supply fair; $3.65 bale.

Los Angeles: Demand steady; trend unchanged; supply ample; Canadian, 6.1 cu. ft. bales $3.75.

Chicago: Demand and supply fair; trend steady; standard, 7⅛ cu. ft. bales $3.85@3.95 cwt.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

Chittenango, N.Y.: Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.30; 100-lb. cartons $1.32, 25-lb. cartons $1.45; freight paid to destination.

POULTRY BY-PRODUCTS

Salisbury, Md.: Good demand; limited supply; trend steady; $102, bulk, producers' plants.

Los Angeles: Demand fair; trend unchanged; supply tight; $1.90 a unit of protein.

Boston: Demand good; supply tight; $98, f.o.b. shipping points.

Ft. Worth: Demand good; supply limited; 55% protein $110, f.o.b. north Texas plants.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4¼¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

San Francisco: Demand good; supply ample; bran $45; polished $49.

Los Angeles: Demand slow; trend weaker; supply limited; bran, California production, high fat content $53, sacked.

Atlanta: Demand and supply fair; trend steady; bran $45.

Ft. Worth: Demand fair; offerings light; carlots, rice bran $35@36, f.o.b. south Texas rice mills; hulls $2.50, f.o.b. mills.

SCREENINGS

Minneapolis: No domestic screenings available; Canadian material has pretty good demand for nearby; water transportation not expected until June, indicating a possible tighter situation for a time; Canadian bulk $22 for May delivery; Canadian ground $31; nominal prices on domestic material; lights $10@20, mediums $21@30, heavier $31@40, flaxseed screenings $35, oil type flaxseed screenings $45, basis 15%.

Buffalo: Demand fair; trend steady to lower; supply good; ground, sacked $33, New York, lake and rail; unground, bulk $27, New York.

Ft. Worth: Demand slow; supply light; ground grain $28@30.

Cincinnati: Demand fair; trend steady; supply adequate; ground screenings $42.

Chicago: Demand very slow; trend steady; supply ample; ground grain screenings $35; Canadian $23.50.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Los Angeles: Demand steady; trend firmer; supply adequate; milo $2.65 cwt., bulk.

Ft. Worth: Demand fair; offerings light; carlots, bulk, No. 2 yellow milo $2.47@2.49, delivered Texas common points.

SOYBEAN OIL MEAL

St. Louis: Demand fair; trend steady; supply ample; 44% $66.50.

Omaha: Demand good; trend strong; supply ample; 44% $61.40, bulk.

Milwaukee: Demand good; supply fair; $53.50, bulk, Decatur.

Memphis: Demand slow; trend lower; supply plentiful; prime 41% solvent $61.

Buffalo: Demand fair; trend steady; supply ample; $83, carlots.

Atlanta: Demand fair; trend steady; supply ample; 44% $68.50.

Minneapolis: Production continues heavy, but demand has been adequate to hold price at $49, bulk, Decatur, for nearby 44% meal for Minneapolis shipment and $50@51 for last week in May; 50% $59, bulk, Decatur, for nearby Minnesota shipment.

Boston: Demand fair; supply adequate; 44% $54.50@55; 50% $60@61, both bulk, f.o.b. Decatur.

Ogden: Supply normal; $81@86.

Chicago: Following the previous week's "leveling-off" tendency from a price standpoint, soybean oil meal during the week ending May 13 showed recoveries of from $1@1.50 ton. However, this seems to have been due more to a lack of selling pressure than to the presence of any improvement in the demand. Quotations: 44% protein, unrestricted, Decatur basis $56.50@57; eastern restricted $53.50@54; 50% protein, unrestricted $62 and eastern restricted $60.

Louisville: Demand dull; trend stronger; supply ample; $69.80.

Wichita: Demand good; supply adequate; 44% $68, 50% $76, f.o.b. Wichita.

Denver: Demand fair; trend steady; supply ample; $77.20.

New Orleans: Demand fair; trend steady; supply ample; $66.50@67.50.

Philadelphia: Demand and supply fair; trend unsettled; 44% $55.50, bulk, Decatur.

Portland: Demand slow; trend lower; supply ample; $50.50, f.o.b. Decatur.

Cincinnati: Demand poor; trend steady; supply adequate; $56@57, bulk, Decatur.

Ft. Worth: Demand very poor; supply sufficient; carlots, southern origin, 44%; immediate $68.60, June $69.60, July-September $70.60; 50% protein: May $78.60, June $79.60, July-September $81.80.

San Francisco: Demand good; supply ample; $80.40.

Los Angeles: Demand slow; trend firmer; supply ample; $76.90@77.40, bulk.

Kansas City: Demand slow; trend steady; supply ample; 44% meal for Kansas City shipment $53@53.50, bulk, Decatur; unrestricted 44% meal $55.50; 50% meal is $6 higher.

TANKAGE

St. Louis: Demand slow; trend weaker; supply adequate; $93.

Omaha: Demand slow; trend easy; supply ample; $97.50.

Cincinnati: Demand fair; trend steady; supply adequate; 60% digester $93.50.

Chicago: Demand steady; trend firm; supply fair; 60% protein $105 in 100-lb. bags.

New Orleans: Demand fair; trend steady; supply adequate; $110@114.50.

Kansas City: Demand slow; trend steady; supply ample; 60% digester $90.

Louisville: Demand slow; trend weak; supply good; 60% $107.50@110.

Wichita: Demand moderate; supply sufficient; 60% $100, f.o.b. plant.

St. Paul: Ample supplies; not much interest; weak trend; 60% digester $90@92.

Ft. Worth: Demand slow; supply very scarce; 60% digester $98, Ft. Worth.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; limited offerings; 6½¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.50 lb.; 25-lb. drums $1.55 lb.; f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.50 lb.; 25-lb. drums $1.55 lb.; f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

Chicago: Continued lack of interest weakened price further; quoted at $34@38 to bring a shakeout of $18@20 in last three weeks.

Buffalo: Demand and supply fair; trend lower; commercial grade $78.

New Orleans: Demand fair; trend steady; supply fair; $104@106.

SPEAKERS

(Continued from page 7)

with courage, must stick his neck out and decide to do something—now!

"It takes courage to delegate. To give a subordinate the authority to perform a function, to stand aside, and let him make a decision—a decision that may turn out to be wrong—takes valor. It is a fundamental precept of business management that although the work load may be distributed down the line, and many decisions may and should be made down the line, final responsibility for an operation cannot be delegated . . . A manager can never abdicate this responsibility.

"6. Character. Managers must be men of high integrity . . . To be a manager a man must have the confidence of his superiors that his actions will be the same whether his deeds are subject to observation or not. This is integrity."

Mr. Fox said his list of six fundamental qualities is not complete, and added, "I must point out that these six qualities are rarely, if ever, found in their fullest degree in any one man. Such a paragon of perfection probably does not exist. The list may be useful, however, to anyone who wants to climb high on the management ladder and who is willing to pay the price of the climb."

WHAT ABOUT SMALL BUSINESS? "Because of the flexibility and speed with which small businessmen can act and react to changing conditions, they are the ones that can capitalize on them first," Mr. Williamson said.

"Big business, of necessity, is slow, cautious, conservative and often unimaginative," he stated. "Actually, it survives and grows through sound, proven and, hence, conservative management policies . . . I assure you that small business as an entity will be here long after the largest and strongest of our corporate giants have ceased to exist.

"Never has there been a time when there wasn't a constant and, in fact, a growing need for small business . . . and this will be true in the future," he said. "Today, American small business is the greatest corporate enterprise the world has ever known, and it will be even greater tomorrow."

The American economy by its very

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nature makes a place for the small businessman as well as the large in the feed industry or in any other business, Mr. Williamson said. At the heart of the economy he sees these six factors:

1. It is designed to serve the consumer, who has freedom to choose and thus has power over the economic destiny of any business.
2. It is set up to serve the investor, who also has freedom of choice.
3. Consumer and investor freedom leads to competition.
4. Competition results in constant change.
5. Change and freedom create a risk economy.
6. The economy operates under a government designed to serve the people and thus protect freedom of choice and investment.

But the function of the government is sometimes confused in this picture, the speaker indicated, as a result of what he called "economic illiteracy" of Americans. This is a danger for American business, both large and small, Mr. Williamson said.

As example of this illiteracy, he cited "our apparent obsession with security under a risk economy . . . You can have one or the other, but not both." He also mentioned "that market that you men are so familiar with, farming. The greatest economic absurdity of all time is being perpetrated. You can't have controls, subsidies, etc., without ending up losing your freedom."

Labor leaders, farm leaders, business leaders and politicians are pursuing a course that will lead to the destruction of this nation, he said.

"However, I believe the American people have the guts that it takes to make the right decisions, not the gullibility to be taken in by today's prophets of false promises."

FREE ENTERPRISE OR DISASTER—Dr. Nyaradi, said to have known more Soviet leaders personally than practically any other diplomat or statesman of the West, said the Soviet Union economy is still plagued with a number of weaknesses, and that therefore he does not expect a shooting war between the U.S. and the U.S.S.R., but does expect Soviet leaders to continue efforts to achieve world domination through other means.

Dr. Nyaradi said that to secure continued health and prosperity of the American economy, we will have to increase the knowledge and the appreciation of the American people toward the free enterprise system.

"Business, therefore, which until now concentrated mostly on building more plants, on increasing production, in creating new jobs, has now another and even more important task on its hands; to bring the story of American business to our people in order to make the Americans understand more clearly what they owe to the American system of free enterprise," he said.

Another great and immediate effort on the part of business is needed in American education, the speaker said. "It isn't just simply more financial support of our education institutions that is needed," he said, "but support is needed for a specific type of education which will make it possible to acquaint the American students with developments, merits and the achievements of the free enterprise system."

He went on to say that he is impressed "by the tremendous care and responsibility with which management protects the interests of their companies, their shareholders, and their paying of dividends," but added, "couldn't business actually invest only 1% of all this money, energy and work into the free enterprise system itself, which makes it possible, after all, to have companies, to have shareholders and to pay dividends in this country?"

He said that as long as the U.S. can maintain and expand its economy, freedom is secure here, but that this freedom is in mortal danger. He added that America is on the road to socialism and, should these trends continue, in 15 years the state or national government might be issuing paychecks to ragged citizens on the streets.

The speaker made an appeal to business to "urgently" consider the necessity of taking a more active part in national politics, "in order not to leave this very important sector to the monopoly of groups and organizations which are not always friendly toward the business sector of the American economy."

MACHINERY

(Continued from page 6)

every two years. The GPMMA, along with the AFMA, has been a co-sponsor of the event.

It was announced by Mr. Hultberg that officers and directors of the machinery group had agreed to accept an offer to share in some of the proceeds of the show and would take part in sponsorship of the next show in 1961. The AFMA will continue to co-sponsor the show also.

Mr. Hultberg said proceeds from the show would not go for association operations but would be used in projects to benefit the industry.

President's Report

In his president's report, Mr. Alsted said that the industry has been moving closer toward a national exposition for the entire grain processing industry. A multiplicity of trade shows and exhibits, he noted, is a costly thing for both machinery firms and their customers, and the association policy should be beneficial.

Mr. Alsted also cited cooperation with the Feed Production School; the association's public relations work; sponsorship of a scholarship program in the feed technology program at Kansas State University; vigilance in watching government activities and possible controls; and work on state taxation problems.

In his annual report, Mr. Walter said the association now has a "hard core" of machinery industry members and hopes to spread out. He also cited policies in regard to exhibits and said that "needless shows increase the cost of equipment to the purchaser."

Mr. Daffin said machinery manufacturers should not wait for an emergency but should be ready for any such event and have a strong association now. E. D. Williams, Butler Manufacturing Co., Kansas City, said meetings with feed industry groups have resulted in a better understanding of the purposes of each, the "forward steps will benefit non-members, too," and the machinery group has now achieved special status in the eyes of other trade groups. In other comments on association activities, George Thomas, Prater Pulverizer Co., Chicago, said that the association is gradually enlisting additional firms as members.

Other comments by association officials emphasized a need for one large industry show, regardless of what may be done on a regional basis or what firms may feel they should do individually, and it was indicated that the Feed Production School is "an educational event and not the place for a trade show." At the same time, continued support of the production school was pledged. It was pointed out that officers of the GPMMA are automatically trustees of Feed Production School, Inc., and other members of the association also are trustees.

Mr. Thomas reported that the GPMMA scholarship student is being graduated this spring, and he recommended granting of another scholarship for the coming year. This was approved by the association.

G. Robert Myers, Myers-Sherman Co., Streator, Ill., told of publicity and public relations work.

George Sprackling of the Daffin firm, membership firm, reported that additional firms were joining the association. In this connection, he mentioned that members and potential members represented 70% of the space at this year's National Feed Show in Chicago.

The GPMMA meeting, held at the Sheraton-Blackstone Hotel, also included luncheon and dinner sessions. George E. Hale, Small Business Administration, speaking at the noon meeting, told of SBA activities and explained SBA policies on loans, including loans for firms installing feed machinery or building mills.

EXTENSION

(Continued from page 7)

in new methods and procedures developed at Kansas State.

The cooperation of the industry will be needed in developing the program, Dr. Weber said. And, according to I. S. Riggs, chairman of the AFMA board of directors, plans call for cooperation of the feed industry in all phases of the program.

Mr. Riggs said there is a great deal of interest among AFMA members in the new venture, and he hailed it as a "great step forward in the combination of two great forces to promote the welfare of livestock and poultry production and marketing."

"The Extension Service and the feed manufacturing industry have been working on the common goal for many years," he said. "The new program at Kansas State should do much to accelerate the efforts of all concerned."

Dr. Weber noted that K-State was selected for the pilot program work because of its "outstanding feed milling department, its feed technology program and the facilities developed in cooperation with industry during recent years."

Canada Egg Production

WINNIPEG—Production of eggs in Canada (excluding Newfoundland) in March rose to 42,401,000 doz. from 40,144,000 a year earlier, placing January-March output 2.9% ahead of last year, at 121,692,000 doz. versus 118,292,000. Average number of layers in the month increased to 29,822,000 from 28,502,000, and number of eggs per 100 layers rose to 1,720 from 1,716.

AFMA

(Continued from page 1)

The TV panel discussion, projected in color on a 15 by 20 ft. screen from another room in the hotel, provided a penetrating discussion of production and marketing developments by food and feed industry experts.

Some of the main conclusions reached by the panel were these:

- Integration in egg production is developing quite rapidly, although there are some doubts the trend will have as much momentum as experienced in the broiler industry.
- A question important to the feed industry is whether integrated egg producers will manufacture their own feed or purchase supplies from the feed industry.
- More stress must be placed on producing eggs with greater shell strength.
- Dual pricing of broilers is considered a necessity by food stores in order to push a large volume, although higher margins for retailers also would be welcome.
- Marketing of a greater portion of broiler production in more convenient forms could improve the price picture.
- Integration in pork production, now a minor part of total output, will probably develop slowly in grain areas but will be an important factor in the West.
- The feed manufacturer must make sure that his operations are contributing to sound and profitable food production, both for himself and animal agriculture.

Sound management on all levels of production and marketing are of primary importance in the steadily increasing demand for higher quality foodstuffs, Mr. Riggs declared.

Broilers and eggs illustrate the perils of progress in production when unplanned and headstrong, "with no regard for the ability of the market to absorb the product at a profitable return to producers and dealers," he said.

With 1959 nearly half over, the broiler industry is still fighting disastrous supplies and egg prices are the lowest in 15 years, Mr. Riggs noted. "Instead of lower numbers of pullet replacements this spring, as you might expect with low egg prices, increased numbers of production pullets are in prospect. With 65% of your tonnage in these two feed items, what is 1959-60 going to be? It could be very bad."

He continued: "It should be clear to everyone that the egg business is vastly different than the broiler business. The broiler business has been an expanding business. The egg feed business is a declining business. Better breeding, more eggs per bird, lower feed conversions and fewer layers are working against us.

"Eggs will be worth a dime a dozen if any attempt is made to increase the number of layers as has been done with broilers. Let's go easy. Don't push this too hard unless you really want to force your competitor out of business and lose your own shirt in the process."

Mr. Riggs said it should be clear that the contract egg business means not $125 million in receivables as in the broiler business, but $600 million if pullets are financed. Also, these receivables turn every year and not every two months, he said.

Adjustments Needed

"We must be prepared to make intelligent adjustments in our industry to the changing patterns which are now evolving," he said. "We must learn how to adjust to our economic environment as successfully as we have our physical environment. The alternative is failure."

Constantly increasing population totals, an increase in consumption of meat animals, dairy products, and poultry, plus the technological revolution now under way in agriculture foretell major changes due in marketing, in market structures, and in business methods by firms servicing agriculture.

But danger lurks in this expansion, Mr. Riggs warned. Greater business risks are involved. These risks must be insulated by good business practices throughout the industry, and the risks must be taken on a profitable basis, he urged.

"The rapidly expanding output of poultry and livestock in this country is not being caused by the feed manufacturer—or integration—or contract farming," he told the group. "It is the result of large supplies of feeds and changing technology which permit some producers to expand their operations, and even make money in markets which appear depressed to those who will follow the old way," Mr. Riggs said.

"In order for the farmer to enjoy an ever-increasing standard of living, it is necessary that his farm grow in size. We should assist this growth by showing our customers how they can make money, through reduced costs and expansion of their individual operations," Mr. Riggs advised.

The future for animal agriculture and the feed industry looks bright, Mr. Riggs said. The nation is on a great population climb that by 1975 will reach a high of 212 million people, demanding dollar food sales 60% higher within 10 years.

Total domestic consumption of meat animals, dairy products and poultry should increase by better than 50% and eggs by 36%, he said.

Planning decisions made today af-

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
March 7	1,194	524	835	765	197	849	1,962	1,941
March 14	1,221	596	962	783	184	821	1,851	2,046
March 21	1,243	519	787	873	139	883	2,051	1,886
March 28	1,231	496	690	961	167	845	1,931	2,084
April 4	1,229	611	985	877	198	885	1,914	2,021
April 11	1,187	596	865	911	182	882	1,833	1,904
April 18	1,215	598	927	871	218	748	1,985	1,729
April 25	1,350	602	735	930	173	711	1,720	1,914
May 2	1,234	666	819	843	191	843	1,986	1,711
May 9	1,240	636	736	873	106	702	1,996	1,649

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
March 7	1,295	680	3,143	357	6,888	263	3,278	2,469
March 14	1,326	626	3,164	437	7,094	232	3,708	2,408
March 21	1,219	731	3,384	377	7,305	239	3,514	2,593
March 28	1,273	678	3,376	379	7,440	216	3,661	2,609
April 4	1,356	637	3,307	413	7,173	264	3,712	2,540
April 11	1,247	676	3,332	375	7,382	214	3,640	2,657
April 18	1,072	681	3,287	390	7,477	220	3,600	2,633
April 25	1,025	694	3,313	338	7,319	193	3,767	2,690
May 2	1,220	601	3,213	326	7,244	222	3,802	2,531
May 9	1,197	633	3,300	320	6,996	205	3,506	2,267

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1959	Total 22 areas 1958
March 7	3,580	450	2,471	345	267	1,176	34,929	30,943
March 14	3,173	575	2,484	350	301	1,068	35,949	29,863
March 21	3,822	494	2,350	356	257	1,165	36,187	29,291
March 28	3,761	505	2,475	336	256	1,213	36,583	30,134
April 4	3,745	559	2,558	352	258	1,207	36,801	31,793
April 11	3,618	488	2,473	329	280	1,245	36,316	33,156
April 18	3,265	485	2,600	326	279	1,173	36,139	33,291
April 25	3,567	468	2,627	418	250	1,188	35,992	33,667
May 2	3,465	550	2,455	375	258	1,054	35,609	33,930
May 9	3,527	485	2,131	369	219	1,055	34,148	34,910

fect markets as much as one, two, or three years hence, he said, and decisions made now will affect next year's livestock markets.

This changing production and marketing pattern increases needs for AFMA services, he said, and consequently "if ever a strong association activity was needed, I think it is now, during these revolutionary changes in our markets for feed."

Three features have helped increase AFMA stature, Mr. Riggs said: The new Sales Executives Council and its first recommendation, the Feed Merchandising Plan; an increased emphasis on marketing data through Oakley M. Ray, director of market research for the AFMA, and a greatly increased prestige in public relations with agriculture, the press, land grant colleges, and the government, through Richard L. Kathe, and the AFMA public relations committee.

Mr. Riggs also commented on the joint AFMA-Animal Health Institute policy statement on medicated feeds: "It behooves all of us to restate the importance of sound management, and good sanitation, to our salesmen, dealers, and in advertising copy. The drug suppliers have taken a firm stand, and if you have read their recent copy, you can see that they, too, are urging less reliance on medicaments and more on good husbandry. The production of meat, milk and eggs is still more of an art than a science."

Discuss Changes

The "Agriculture in Transition" presentation was divided into four segments, with Oakley M. Ray, AFMA director of market research, serving as coordinator of the discussions.

Participating in the egg discussion were A. V. Scollard, manager of the Safeway Stores egg department, Oakland, Cal.; Chester B. Franz, owner of Chester B. Franz, Inc., poultry processor and distributor, St. Louis, and Hobart Creighton, Creighton Bros., an integrated egg operation in Indiana. Here are some of the points they brought out:

Shell quality of eggs requires more attention in order to fill the needs of buyers seeking eggs that can be handled with minimum loss. Interior quality of eggs has been improved greatly, but there is a shortage of eggs with sufficient shell strength (Scollard).

Egg consumption is not as much lower as statistics indicate. Losses on the way to market, because of improved handling methods, have been reduced sharply in recent years, and thus more eggs actually are getting to consumers than formerly. Production statistics do not take this into account (Franz).

An important question in the egg production picture is whether or not the egg producer will manufacture his own feed. Integration is definitely a factor in lowering of egg prices, but prices may be expected to advance in a few months. For the longer term, the general level of egg prices may be expected to average lower because of improved production efficiency (Creighton).

Egg production is likely to continue to move closer to consumers. Some egg programs have been a failure because they were out of position in relation to markets (Scollard).

Eggs can be produced 3¢ doz. cheaper in the Midwest and shipped to eastern markets for 2¢ doz., so the midwestern producer should be able to retain part of eastern markets. Eggs should be sold on the basis of the cost of manufacture and not on an open market basis (Creighton).

It will not take 20 years to arrive at more or less complete integration in the egg business (Franz).

The individual farmer will compete with the integrated egg operator for longer than the independent broiler grower was able to (Scollard).

More integration in egg production definitely is coming (Creighton).

(In a question and answer session later, Mr. Creighton reported that he installed a feed plant when his company had 30,000 layers. It now has 150,000 and manufactures feed from a premix and local grains.)

Pork Developments

Pork panelists were William C. Purdy, director of meat merchandising, Jewel Food Stores, Chicago; William C. Haase, swine specialist, Swift & Co., Chicago and Keith Meyers, executive secretary, National Swine Growers Council, Grundy Center, Iowa. The pork discussion proceeded along these lines:

Expenditures for beef surpassed those for pork for the first time in 1951, and pork's share in the consumer preference has continued to decline (Haase).

Consumers have backed away from pork purchases because too much of the pork offered is from fat hogs. A typical fat hog yields 30% of the four lean cuts and a meat-type hog yields 39% of these cuts (Purdy).

Producers now are supplying more lean hogs, and many of these will measure up to the quality standards of Canadian pork (Meyers).

Swift & Co. is working on a merit buying program, offering a premium on the basis of percentage of yield of lean cuts. The leaner hog described by Mr. Purdy would bring a premium of $4.50 over the one yielding only 30% lean cuts (Haase).

The meaty hog is cheaper to produce because it is a more efficient converter of feed (Meyers).

The packer faces integration developments with mixed feelings. Production under such programs now makes up only a small portion of total production and can be considered largely a matter of experimenting up to now. Some larger operations are developing in the South, however. Integrated programs have started out with good breeding stock (Haase).

Integration has not made much progress in the Corn Belt, and it is doubtful that very much will develop in that area in the next 20 years (Meyers).

Because of the huge investments involved, most packers would prefer not to get into integrated hog programs (Haase).

Hogs can't stand crowds as well as poultry, and much of the success in swine raising depends on knacks and know-how not easily supplied under mass production methods. This would tend to stand in the way of integration along poultry industry lines (Meyers).

Broiler Situation

Poultry meat panelists were Joseph H. Mueller, poultry and seafood buyer, National Tea Co., Chicago; R. F. Frazier, executive vice president, National Broiler Council, and Mr. Franz, who described himself as an example of "double jeopardy," being in both the egg business and poultry meat business. Some of the comments on poultry meat were these:

Selling chicken meat at a profit is the central problem. The feed industry has passed up an opportunity to market chickens in convenient forms. About 80% of the poultry marketed today is offered to consumers in the same form that it was handled 20 years ago. This contrasts with, for example, changes that have occurred in marketing of shrimp, which stresses convenience to the consumer, quality and partial preparation. This has resulted in profit for all concerned (Mueller).

Improvements have been made in broiler marketing through offering cut-up birds, for example, and other changes are being studied. A market survey would be desirable to determine what consumers need (Frazier).

Most retailers would like processors to do more of the preparation of broilers before they are put into retail channels (Mueller).

While many of the poultry industry's problems are due to practices within the industry, some have their origin elsewhere. Some basic economic laws are being violated. Government supports on grain prices have held up feed costs, and as a result of labor legislation, labor gets a lion's share of the consumer's food dollar. Also contributing to the industry's troubles are high taxes and the devalued dollar (Franz).

Dual pricing of broilers, which has been blamed for some of the industry's marketing troubles, was the subject of a study by the National Tea Co. last year. For a three-week period in 1958 broiler prices were held steady at 35¢ lb. Results were compared with sales during the comparable period in 1957, when dual-pricing was used, and it was determined that the store had lost 25% of the normal increase in volume. It was decided to go back to dual-pricing. National's policy is against low-margins unless competition forces it. The company would like to hold a modest margin for special sales and then move up to a normal margin. If all retailers held prices up to normal margins constantly, the large broiler supplies could not be moved. Compounding the problem is the fact that food stores have to move other types of meat, too (Mueller).

Poultry is selling far below its economic value. The industry has plenty of poultry production experts, and what it needs is more men who can manage money (Franz).

Most important in the broiler industry's future are steps to produce profitably and to examine new marketing methods (Frazier).

Interpretation

Comments on the discussion were provided by three "interpreters": Fred W. Hoover, Jr., president, Albers Milling Co., Los Angeles; E. F. Dickey, president, Honeggers' & Co., Fairbury, Ill., and Dr. G. B. Wood, head of the department of agricultural economics, Oregon State College. Some of their observations were these:

There are more than 4,000 feed mills in operation now, and in evaluating its role of the future the industry should ask itself what worthwhile service it is performing. A feed manufacturer should ask himself if he is contributing to the long-term benefit of agriculture or operating programs merely to gain a quick tonnage. The manufacturer must consider total economics and know where livestock and poultry products he helps produce are to be marketed (Hoover).

Integration and contract farming will move rapidly in the next 10 years. It is possible that the feed industry will someday be regarded in relation to agriculture as the steel industry is to metal-working industries. Which segment of agricultural production will be dominant in the future will depend on who can do the job at the least cost—food stores, feed companies, processors or farmers through cooperative organizations (Wood).

The feed business is highly specialized, and the question to be considered in relation to integration is whether one man with hired help can do as well as the fellow who has his own money in the operation. Some earlier ideas about production trends have been proved wrong, as in the case of the shift of broiler production to the South in spite of the belief that grain-producing areas have cost advantages. Other cost factors enter the picture. Feed margins will have to be reduced—they can be where production is specialized. The feed industry has to develop ways and means of producing food at lower costs and must gear its operations to help producers develop improved market techniques. Pork integration is nil, and it is doubtful that integration in eggs will come as rapidly as it did in broilers (Dickey).

Hog production will expand in the West through integrated programs (Wood).

A prediction that 100 producers eventually will supply all of California's eggs could turn out to be true (Hoover).

The AFMA program was planned by a committee headed by Paul R. Ray, vice president, Chickasha (Okla.) Cotton Oil Co. Arrangements for the Ediphor TV system which projected the panel discussion were made by Ciba Pharmaceutical Products, Summit, N.J.

MARKETS

(Continued from page 2)

and advanced $1.50 to $2 on the 44% meal and $1 on the 50%. Linseed oil meal declined on the nearby delivery as northwest offerings continued to come through. Gluten meal and cottonseed oil meal held steady.

Meat scraps were still a little on the weak side but are showing signs of bottoming out after a $15 drop in one month. Fish meal continued weak on new catches and is off $10 from a month ago.

Brewers' grains declined $1 and distillers' grains dropped $2. Hominy fulfilled its prediction of higher prices and rose 50¢. New crop alfalfa meal dropped $7 to $8 and still lower prices are expected. Gluten feed held steady.

Millfeed sales were quiet, with the country trade holding up and mixer demand on a spot basis only.

Running time of formula feed manufacturers averaged about 40 hours last week.

Southeast

The broiler feed business is showing a slightly better tone this week. Feed mills continue to report their running time as being about steady. The north Georgia broiler market improved 1¢ to 2¢ lb. this week, with asking prices 15¢ to 16¢ lb. f.o.b. the farms. Most of the sales were in the 15¢ lb. level.

According to USDA reports, chick

placements for the week ending May 2nd were down 123,000, with Florida and Alabama showing a slight increase and Georgia and North and South Carolina showing a decrease.

Good demand for corn and less truckers advanced the price this week 3¢ bu. to $1.48 in the Atlanta-Gainesville area. Feed ingredient buyers continue to buy their major proteins on an "as needed" basis, and prices are remaining practically unchanged.

Dairy and cattle feed business continues on the slow side, however some ranchers indicated that they may begin steer feeding operations the latter part of next week. Most will hold off until July or early August.

The citrus processing season will be over in about 30 days, and many processors have withdrawn from the market, as they are fearful of being oversold in citrus pulp.

Central States

Commercial feed manufacturers have been reporting some "sloughing-off" in the demand for cattle feeds. The consensus has been that improved pasture conditions over a widespread area due to the receipt of timely rainfall has been the main item causing the let-down. The let-down, while noticeable, has not been really of major proportions.

Call for hog feeds held up very well, on the other hand. Demand for chick-starter has also been showing some moderate betterment.

Action in the egg market continues to occupy a lot of attention as eggs dropped to the lowest figure on Monday of this week in eighteen years. Some in the trade are beginning to wonder just when this tobogganing act is going to come to a climax. At the same time, they are expressing concern over possible impact on the demand for laying-mash and some of the other formula poultry feeds.

South Central

Formula feed sales were "rather mediocre" this week, according to mill representatives. Business isn't good enough to create a lot of enthusiasm, but neither is there any concern being expressed over the possibilities of a downturn. In general, mills have abandoned their expectation of a seasonal surge in demand and now expect business to continue along unchanged from the unhurried pace of the last several weeks.

Some mills are experiencing a gradual slowdown in layer feed demand brought on by declining egg returns. Egg producers are distinctly unhappy with their problems. Not only have cash egg prices slipped to 18-year lows, but also shipments have to be held up because of a shortage of egg cases in the area. Produce men tell of an increasing number of calls from discouraged poultrymen wanting to liquidate their flocks.

Hog feeds are carrying the load on mill production. There is still a good amount of concentrate business, but the main volume comes from pig starters and growers.

Mill running time averages out about five days, normal shifts. Some short runs are reported but generally the time has to be made up later in the week.

Ohio Valley

Although the violent tornadoes that brought death and destruction to many midwest areas early this week had spent their fury by the time they reached the Ohio Valley, this area experienced several days of heavy thunder and rain storms that, fortunately, caused but minor damage, while thoroughly soaking the ground.

Meanwhile, area manufacturers reported a fairly steady volume of business, although tonnages of poultry and baby chick feeds continue well below the volume that had been anticipated earlier in the year.

This situation, of course, is brought about by the continuing glut in the poultry and egg markets. These markets, the USDA reported this mid-week, remain "weak," with supplies "more than adequate to meet seasonal usage." It also was noted that "sales to breaking plants are becoming more difficult to obtain, thus creating a weaker undertone."

It appears likely that this situation will continue virtually unchanged for some time.

Mountain States

Formula feed mill representatives in this area report sales volume up somewhat from a week ago and a shade better than a year ago at this time.

Feeds getting the most demand are poultry and turkey feeds. There has been a slight increase in the turkey population and a heavy increase in chicks. There has been a slight decrease in the past week in cattle feeds. Most of this feed has been for immediate use. No inventory buildup is reported by dealers.

Pacific Northwest

Feed ingredient prices continued to average slightly higher during this week's moderately active trading.

Trade sources indicated that offerings of principal ingredients were not pressing and some items continued in very scarce supply.

Prices for most feed grains advanced under the influence of light to scarce offerings. Whole corn and milo were priced 50¢ to $1 ton higher while barley sold unchanged to 50¢ up.

Quotations for all other feedstuffs held steady and unchanged with the exception of soybean meal which finished the week 50¢ ton lower.

Most mixers reported at Portland and Seattle that the formula feed business was maintained at volume levels despite unfavorable feeding ratios for poultrymen. Turkey poult placements continued on the heavy side.

Most of the week's weather was cool and rainy, but temperatures near the close were substantially higher, and provided excellent growing conditions for grain crops and forage.

Pacific Northwest alfalfa markets showed little change during the week, with trading seasonally dull as the reflection of a continued narrow demand for relatively light supplies.

Trade reports indicate that new crop alfalfa harvesting is just starting in Washington's Pasco district.

Cattlemen received steady to strong prices for fed steers during North Portland livestock market trading when they were paid within a $29.50 to $30 range for choice grade ones.

Producer paying prices held unchanged and about steady for eggs while live hens brought poultrymen 1¢ lb. lower listings at Portland.

Breeder turkey marketings were slightly increased at Portland where prices held unchanged at 23¢ lb. for A grade toms and hens.

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